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Assessment and Evaluation of the Lake Trout Sport Fishery in Great Bear Lake, N.W.T., 1984-85

M.M. Roberge and J.B. Dunn

Central and Arctic Region
Department of Fisheries and Oceans
Winnipeg, Manitoba R3T 2N6

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by

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Central and Arctic Region
Department of Fisheries and Oceans
Winnipeg, Manitoba R3T 2N6

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ABSTRACT

Roberge, M.M., and J.B. Dunn. 1988. Assessment and evaluation of the lake trout sport fishery in Great Bear Lake, N.W.T., 1984-85. Can. Manuscr. Rep. Fish. Aquat. Sci. 2008: vii + 91 p.

Data from standard creel census surveys are compared to those conducted during the 1970's. The intensive creel census program provides information, on a subarea basis, on the size of trout being exploited and catch per unit effort data for each management area. Included is a comparison between the size of trout between subareas and between those utilized for shorelunch to those kept (reported in the standard creel census). Data from the experimental netting program provided information on various lake trout population parameters. Recommendations are made on an initial total allowable harvest for lake trout by management area, future monitoring programs and research studies.

Keywords: creel census; harvest statistics; population assessment; sport fishing; total allowable harvest.

RÉSUMÉ

Roberge, M.M., and J.B. Dunn. 1988. Assessment and evaluation of the lake trout sport fishery in Great Bear Lake, N.W.T., 1984-85. Can. Manuscr. Rep. Fish. Aquat. Sci. 2008: vii + 91 p.

On compare les données de relevés standard de pêche sportive à celles obtenues en 1970. Ce programme intensif de relevés de pêche sportive fournit de l'information par sous-secteur sur la taille des truites capturées et par secteur de gestion sur l'indice de prises par unité d'effort. On y inclus une comparaison entre sous-secteurs de la taille des truites ainsi qu'entre les truites consommées sur le rivage et celles conservées (donc rapportées par le relevé de pêche sportive). Les données d'un programme de pêche expérimentale au filet fournissent de l'information sur différents paramètres des populations de truites grises. On recommende des limites initiales au niveau de captures de truites grises pour chaque secteur de gestion et des programmes de contrôle et de recherche.

Mots-clés: relevés standard de pêche sportive; évaluation de population; pêche sportive; limite du niveau total des captures.

INTRODUCTION

Lake trout (Salvelinus namaycush) is one of the more important commercial and sport fishes in Canada (Martin and Olver 1980). It is considered to be one of the most important sport fish species in the Northwest Territories, particularly in Great Bear Lake (Falk et al. 1973). Prior to 1960, Great Bear Lake contained large stocks of unusually large-sized lake trout (Yaremchuk 1986). During this time limited exploitation by the subsistence fishery based out of Fort Franklin occurred (Miller 1947). Sport lodge development occurred during the 1960's with the establishment of five lodges scattered within four of the five arms of the lake (Figure 1). Harvest levels in the sport fishery were not recorded until the 1970's.

The Department of Fisheries and Oceans (DFO) conducted investigations on the status of the lake trout sport fishery in Great Bear Lake from 1972 to 1980. Summaries of the data collected during the studies are presented in Falk et al. (1973, 1974a, 1974b, 1975, 1982), Gillman and Roberge (1982), and Moshenko and Gillman (1978a, 1978b, 1983). Yaremchuk (1986) integrated these data and provided interpretations on the status of lake trout in the vicinity of each lodge during the nine year study. As well, this previous data was analysed for information on the relations between exploitation level and lake trout growth rates and maturation.

In 1984, based on the program evaluations and recommendations made by Yaremchuk (1986), the DFO initiated a two-year follow-up investigation on the status on lake trout exploited by the lodge-based sport fishery. Alternate monitoring methods from those used during the 1972-1980 period consisted of sampling the areas with gill nets supported by a standard creel census and collecting data (using lodge guides) on all fish caught (including those fish released) by a sample of anglers from each lodge.

The Great Bear Lake Working Group recommended the development of a management strategy with the objective of maintaining a 'high quality trophy' fishery for lake trout (DFO 1985). The Working Group recommended that part of the strategy should be the regulation of the number of fish harvested which may be achieved through a variety of processes including the development of a special license system. Information necessary in the development of a license system for the maintainence of a high quality fishery includes total allowable harvest levels for lake trout.

This report presents the data collected from the 1984-1985 investigations from the experimental gill netting, the standard creel census, and the intensive creel census programs. This information, along with the analysis of the 1972-1980 period (Yaremchuk 1986), is used to evaluate the status of lake trout in the areas utilized by the lodge-based sport fishery and to estimate initial total allowable harvest levels for a long-term sustainable sport fishery for trophy lake trout.

STUDY AREA

Great Bear Lake is an extremely oligotrophic lake. The lake has a water surface area of 30 397 km^2 with a mean depth of 71.7 m. Water clarity is high with maximum Secchi transparencies of 30 m. Dissolved solids are low (78.4 to 81.0 ppm) and pH ranges between 7.8 and 7.9 (Johnson 1975). A detailed limnological description of the lake is presented by Yaremchuk (1986).

Lake trout are widely distributed in Great Bear Lake. Johnson (1975) suggests that lake trout are basically sedentary with minimal long distance movements. Johnson (1975) and Miller and Kennedy (1948) found that lake trout reach greatest densities in depths <24 m. Young trout <100 mm are found to inhabit rocky shorelines, inflowing streams, and deeper waters (<55 m). Adults (>200 mm) were found to utilize all regions of the lake. Miller and Kennedy (1948) found adults to prefer non-marshy bays (excluding spawning runs). They were less numerous in the colder open lake and warmer turbid river mouths and were least abundant in marshy bays. Miller and Kennedy (1948) found evidence of morphologically distinct groups which they believed to be the result of environmental differences.

Miller and Kennedy (1948) indicate that the variation in the degree of infection of the parasite, Triaenophorus crassus, in various parts of the lake suggest that adult lake trout stay in the region of their natal bay. Johnson (pers. comm.) records trout being tagged in the vicinity of a lodge and subsequently being recaptured as much as 25 years later in the same vicinity. Trout tagged from 1978 to 1980 were recaptured in the same area as tagged indicating that lake trout stocks probably do not intermix (unpublished data and Falk et al. 1982). Therefore, since lake trout are basically sedentary and because of the isolation of each lodge and the utilization, generally, of distinct fishing areas, six management areas for lake trout are recognized: Dease Arm, McTavish Arm (north), McTavish Arm (south), McVicar Arm (north), Keith Arm and Smith Arm (Figure 1). It is not known, however, if these stocks located in the various arms intermix during breeding.

PROTECTION AND REGULATIONS

Under the Northwest Territories Fishery Regulations prior to 1974, the daily catch and possession limits for lake trout in Great Bear Lake were 5 and 10, respectively. In 1974, these limits were reduced to 3 and 5. In 1979, the catch and possession limits were further reduced to 2 and 3 with the additional limitation to possession of one lake trout in excess of 70 cm fork length to protect the "trophy" fishery (Gillman and Roberge 1982).

The existing management strategy for the lodge-based sport fishery is an indirect control on access to the fishery by a licensing system on the numbers and bed capacities of the lodges

along with the above special catch and possession limits (DFO 1985). The areas fished by a lodge are indirectly controlled by lodge location and directly by lodge self-regulation. There has been no recent lodge expansion in terms of the establishment of a new lodge; however, there has been an increase in the number of outpost camps in the recent past. This has resulted in an expansion of fishing into new areas of the lake in pursuit of large fish and may include the exploitation of the same area by more than one lodge.

METHODS AND MATERIALS

GENERAL

DFO personnel were stationed at sport fishing lodges on Great Bear Lake from the beginning of their fishing season to near the end in order to collect standard creel census information, oversee an intensive creel census program, and conduct an experimental netting program. Investigations were carried out over two years, 1984 and 1985. In 1984, four management areas and lodges were surveyed: Dease Arm (Great Bear Lake Lodge), McTavish Arm-north (Arctic Circle Lodge), McTavish Arm-south (Bransons Lodge), and McVicar Arm-north (Great Bear Lodge-Bear Island Outpost and Neiland Bay Outpost). Smith Arm (Trophy Lodge) was surveyed in 1985. Boundaries used for each management area are depicted in Figure 1.

EXPERIMENTAL NETTING

Experimental netting was conducted using standard gangs composed of 50 m lengths each of 38, 64, 89, 114 and 139 mm (stretched mesh) nylon gill nets. Nets were set randomly at a number of different locations in areas utilized by each lodge (Figures 3, 9, 15, 19, 27). The gill nets were usually set in the late evening and lifted in the early morning to mimimize fish mortalities as well as to prevent an overlap with the anglers fishing in the same area. The catch was recorded by mesh size and by species, and the fish were sampled later for biological analysis. Fish species other than lake trout (lake whitefish and cisco) were subsampled when the catch were large. Any fish caught live and in good condition were measured for fork length and released.

Scientific names of those fish caught follow Scott and Crossman (1973): lake trout, Salvelinus namaycush (Walbaum); lake whitefish, Coregonus clupeaformis (Mitchell); cisco, Coregonus sp.; lake cisco, Coregonus artedil (Lesueur); northern pike, Esox lucius (Linnaeus); round whitefish, Prosopium cylindraceum (Pallas); and Arctic grayling, Thymallus arcticus (Pallas).

STANDARD CREEL CENSUS

A standard creel census (Falk et al. 1974) was carried out at each lodge and in conjunction with the lodge operation in regards to the best time to collect catch and effort information. The procedure was similar at each lodge as only the guides were interviewed and the time of the interview was usually around 1800 h (supper time). The guides were questioned on the fishing success of their clients since the last interview (included the previous nights fishing as well as that day's fishing). The questions the guides were asked were:

1) The anglers' names and where they were from (province/state);
2) The hours spent fishing by each angler excluding travel time; and
3) The number by species of fish caught by each angler and the use of each fish as to whether it was kept (e.g. trophy fish), released or eaten for shorelunch.

When possible, the general area fished that day was also noted. The retained catch (kept) was sampled whenever possible for later biological analysis. An example of a creel census form is provided in Appendix 3.

INTENSIVE CREEL CENSUS

An intensive creel census program was developed and initiated at four of the five lodges (excluding Bransons Lodge) to determine the number and size range (fork length) of the exploited segment of the trout stocks. These data as well as effort information (hours fished) were collected on an subarea-specific basis. The program involved using four fishing guides from each lodge to record angling information as the event occurred. These guides were supplied with a small binder containing an area map and record forms (Appendix 4) and a measuring trough. On the forms the guides recorded the date and the anglers name(s). Additional information collected was done on a subarea basis. This included the hours spent fishing, the number by species of all fish caught, and the use (kept, released, or shorelunch) by individual fish. As well, the fork length of each fish caught was measured to the nearest 1 cm. The forms were collected by DFO personnel at the end of each fishing day (or every second day). Prior to the start of the program a letter explaining the program was given to each angler and the choice was theirs to volunteer participation in the program.

BIOLOGICAL SAMPLING

Fish from the anglers creel and from gill nets were sampled for fork length (±1 mm), round weight (±50 g), aging structures (scales and otoliths), sex, stage of maturity, and stomach contents. Sex and relative stage of maturity were determined by examination of the gonads. Relative stages of maturity were coded according to the stages described in Appendix 7. Trophy fish (usually large fish kept for mounting) were sampled only for length and weight when available. Trophy lake trout sent to Hawkins Taxidermist, Winnipeg, Manitoba, were sampled for fork length, sex, and sagittal otoliths, (Appendices 12, 13, 26, 27).

Sagittal otoliths were taken from lake trout and scales were taken from ciscoes, lake whitefish, round whitefish, Arctic grayling, and northern pike as described by Hatfield et al.

(1972). Age determinations were made as described in Roberge and Dunn (1985).

TOTAL ALLOWABLE HARVEST

Yaremchuk (1986) suggested that the allowed harvest rates required to sustain a "high quality trophy" lake trout sport fishery on Great Bear Lake be 0.040-0.095 fish/utilized hectare (area actually being fished). Using these rates and taking into consideration the loss to the population through a release mortality of 7% (Falk et al. 1974c), an initial total allowable harvest (TAH) for lake trout was estimated.

The total allowable harvest is the number of fish allowed to be harvested and includes all fish retained for either shorelunch or trophies. A preliminary estimate was calculated using the following formula:

$$TAH = (UH) \times (HR) - (RMR)$$

where:

UH = utilized hectare (area specific)
HR = harvest rate (0.040 - 0.095)
RMR = release mortality rate (7%)

Additional data on prior harvest levels and lake trout stock status were then evaluated and an initial value for the TAH was determined.

DATA ANALYSIS

A micro Vax II computer was used to manipulate the data. The Statistical Analysis System (1985) was used to generate length, weight, sex, age, and maturity summaries and to perform basic calculations and statistical analysis. Weight/length relationships were determined using the following power equation:

$$\text{Log}_{10} W = a + b\ (\text{log}_{10} L)$$

where:

W = weight in grams
L = length in centimeters
a = Y-intercept
b = slope of the regression line

The standard deviation of the coefficient $b(S_b)$ was also calculated. Relative condition factor (K) was calculated using the following formula:

$$K = \frac{W \times 10^5}{L^3}$$

where:

W = weight in grams
L = length in centimeters

Instantaneous total mortality rate (Z) represents the number of fish which would die in any small interval of time (Ricker 1975). Z was calculated from the least squares regression line fitted to the descending limb of catch curves. Catch curves were fitted by eye and only that portion of the curve that appeared linear was included in the analysis. Moderate fluctuations in recruitment in different year classes tend to create an irregular shaped catch curve. To reduce these irregularities, samples from successive years were combined (Ricker 1975). Ricker (1975) indicated that the modal age in the catch curve will commonly lie quite close to the first year in which recruitment can be considered effectively complete. Therefore, only the next older and subsequent age groups from the modal age were used.

Length and age frequencies were constructed to display catch composition. Duncan's multiple range test was used to determine significant differences in age and length within and between subareas and areas.

RESULTS AND DISCUSSION

GREAT BEAR LAKE

Harvests, yields per utilized hectare, catch per unit effort, and instantaneous total mortality rates are presented by management area in Table 1 for all available standard creel census samples. Data from the intensive creel census samples on catch and mean length (by use), effort, and catch per unit effort are presented in Table 2, 3, and 4, respectively. Catch curve instantanesus total mortality rates (Z) by management area are presented in Figure 2.

DEASE ARM (1984)

Experimental netting

Lake trout and lake whitefish were the two main fish species netted (Figure 3) with lake trout comprising 77% of the total catch (Table 5). Catch per unit effort for lake trout was calculated to be 0.77 fish/100 m gill net/24 h, (Table 5).

Mean length of lake trout netted was 625 mm (Table 6) and modal length was 625-649 mm (Figure 4). Mean weight was 2.3 kg and K value was 1.07 (Table 6). Mean age was 19.3 yr (Table 7); however, a unimodal age group was not found (Figure 4). Total instantaneous mortality rate (Z) was estimated to be 0.34 (Figure 2).

Standard creel census

The areas (54 400 ha) generally fished by anglers from Great Bear Lake Lodge are presented in Figure 5. Total number of lake trout harvested was approximately 3900 fish (Table 1). Yield per utilized hectare was 0.07 fish/utilized hectare. Table 1 indicates that the number of trout harvested from 1972 to 1984 has decreased as did the yield/utilized ha. However catch per unit effort doubled during the same time period.

Mean length of lake trout retained by anglers from Great Bear Lake Lodge was 664 mm (Table 8) with a modal length of 625-649 mm (Figure 6). Mean weight was 1.65 kg (Table 8). Mean age was 21.0 yr (Table 9) and modal age was 22 yr (Figure 6). Total instantaneous mortality rate (Z), estimated using data from kept fish only, was 0.39 (Table 1).

Intensive creel census

The subareas which were utilized are depicted in Figure 7. There were 610 lake trout

caught (Table 2) in 621 hours of fishing (Table 3) during the program. The majority of effort was expended in subareas 2 and 3 while the highest catch per unit effort was found in subareas 1 and 4 (Table 4).

The mean length of trout caught was 60.7 cm (Table 2). There was a significant difference ($P<0.05$) in the size of trout caught between subareas(Table 10). Trout from subareas 2 and 3 had similar distributions ($P>0.05$) but were significantly smaller ($P<0.05$) than trout caught in either subareas 1 or 4 (Figures 7).

Lake trout eaten for shore lunch were significantly smaller ($P<0.05$) than those fish kept (55.8 cm and 67.3 cm, respectively) (Table 2).

Evaluation and recommendation

Data from the gill net samples indicated there was a significant difference ($P<0.05$) in the mean length of lake trout from Dease Arm as compared to that for trout from all other areas surveyed. Trout were smaller than trout from Smith Arm or McVicar Arm (north) but larger than trout from McTavish Arm (north and south). The mean age was significantly older ($P<0.05$) than that for trout from McTavish Arm (north and south) but similar to the other two areas surveyed.

There has been a general trend toward a decrease in the mean length of trout in the standard creel census samples since 1972 as well as a decrease in the modal length since 1977. Mean age and modal age have also decreased since the 1970's. There was a marked absence of fish older than 30 yr from 1972 to 1984.

The decrease in mean length (and subsequently the mean age) is believed to be due to a decline in the population and not to a change in angler selectivity. Data from the intensive creel census program indicated that the size of trout caught from the two major fishing areas (subareas 2 and 3) appeared to have declined in relation to the other subareas fished when comparison was made between the size of fish caught and the catch per unit effort values. The large mean length in the standard creel census is therefore probably the result of the retention of only large sized fish from subareas 2 and 3 and from other less heavily exploited subareas.

Instantaneous total mortality rate (Z), as determined from the standard creel census samples, increased from 1973 to 1984. The Z from the gill net samples is higher than that recommended by Yaremchuk (1986) for a population that has stabilized (0.34 and 0.24, respectively) indicating that the population is still in a decline.

The decrease in mean length and age, the decline in the availability of trout >30 yr, and the increase in Z illustrates the fishing down of the standing stock of lake trout in the Dease Arm. It is also an indication that the trout population has not yet stabilized and is continuing the decline as identified by Yaremchuk (1986).

Therefore, in order to sustain the 'trophy quality' sport fishery for lake trout in the Dease Arm and taking into consideration the past harvest levels, the decline in size and age, the increase in Z, and the continuation of the stabilization process, the initial total allowable harvest for lake trout for the area is estimated to be 2000 fish.

McTAVISH ARM - NORTH (1984)

Experimental netting

Lake trout was the main fish species netted (Figure 9) and comprised 97% of the total catch (Table 10). Catch per unit effort for lake trout was calculated to be 2.14 fish/100 m gill net/24 h. (Table 10).

Mean length of lake trout netted was 476 mm (Table 11) and modal length was 575-599 mm (Figure 10). Mean weight was 1.3 kg and K value was 1.10 (Table 11). Mean age was 13.9 yr (Table 12) and modal age was between 8 and 12 yr (Figure 10). Total instantaneous mortality rate (Z) was estimated to be 0.27 (Figure 2).

Standard creel census

The areas (48 900 ha) generally fished by anglers from Arctic Circle Lodge and Outpost Camp and Bransons Lodge are depicted in Figure 11. Total number of lake trout harvested was >2345 fish (Table 1); this does not include the harvest of trout taken by anglers utilizing either the Arctic Circle Outpost Camp nor those from Bransons Lodge. Minimum yield per utilized hectare was 0.05 fish/hectare. Table 1 indicates that the number of fish harvested from 1975 to 1984 decreased and the catch per unit effort decreased by approximately half.

Mean length of lake trout retained by anglers from Arctic Circle Lodge was 606 mm (Table 13). Bimodal length were found at 425-449 mm and 625-649 mm (Figure 12). Mean weight was 2.97 kg (Table 13). Mean age was 16.6 yr (Table 14) and modal age was 14 yr (Figure 12). Total instantaneous mortality rate (Z), estimated using data from kept fish only, was 0.24 (Table 1).

Intensive creel census

The subareas which were utilized are depicted in Figure 13. There were 1496 lake trout caught (Table 2) in 1551.5 hours of fishing (Table 3). The majority of effort was expended in subarea 2 while the highest catch per unit effort was found in subarea 5 (Table 4).

The mean length of trout caught 49.6 cm (Table 2). The only significant difference ($P<0.05$) in the size of trout caught between subareas was found in subarea 5 (Figure 14). Trout caught from subareas 1 to 4 had similar size distributions ($P>0.05$).

Lake trout eaten for shorelunch were significantly smaller ($P<0.05$) than those fish kept (47.3 cm and 62.2 cm, respectively) (Table 2).

Evaluation and recommendation

Data from the gill net samples indicated that the size of lake trout from McTavish Arm (north) were significantly smaller ($P<0.05$) (except for southern McTavish Arm) and younger ($P<0.05$) than trout from any other area surveyed.

Mean length of lake trout from the standard creel census samples increased from 1975 to 1984 but this was probably the result of the retention of only large sized fish as indicated from the intensive creel census samples. Data from the intensive creel census program indicated that the size of trout caught was significantly ($P<0.05$) smaller than trout kept and reported in the standard creel census. Data also indicated that the size of trout caught in the major fishing area (subarea 2) was significantly smaller ($P<0.05$) than that for fish caught in the area west of the Outpost Camp (subarea 5), an area of recent exploitation. The smaller size in subarea 2 as compared to subarea 5 may be an indication of the effects of a heavy exploitation when comparison is made not only with the size of trout caught but also the reduced catch per unit effort values.

Bimodal length distribution was evident in the 1984 standard creel census samples only; the presence of the smaller modal length may be an indication of fluctuations of year class strength or a decline availability of 'trophy quality' sized fish (Yaremchuk 1986). Mean age decreased from 1975 to 1984 as did the modal age indicating that the population has not yet attained a stable structure (Yaremchuk 1986). There is also an absence of fish older than 25 yr in 1984 compared to that found in 1975 indicating that the large sized trout in the original standing stock has been fished down.

Instantaneous total mortality (Z), as determined from the standard creel census samples, increased from 1975 to 1984. The Z from the gill net samples is slightly higher than that recommended by Yaremchuk (1986) for a stabilized population of lake trout from Great Bear Lake. Therefore, the lake trout population from McTavish Arm (north) is probably still in a decline.

The stock of lake trout in northern McTavish Arm appears to have declined between 1975 and 1984 as indicated by the shift in the length distribution towards smaller sized fish, the decrease in the mean and modal age, disappearance of trout older than 25 yr, and the increase in Z. This conclusion is supported by the comparatively low mean length and age found in the gill net samples as well as the small mean length of trout from the intensive creel census samples.

Therefore, in order to sustain the 'trophy quality' lake trout sport fishery in the McTavish Arm (north) and taking into consideration the past harvest levels, the decline in the size and age distributions, the increase in Z, and the continuation of the stabilization process, the initial total allowable harvest for trout from the area is estimated to be 1500 fish.

MCTAVISH ARM - SOUTH (1984)

Experimental netting

Lake trout was the main fish species netted (Figure 15) and comprised 97% of the total catch (Table 15). Catch per unit effort for lake trout was calculated to be 0.34 fish/100 m gill net/24 h (Table 15).

Mean length of lake trout netted was 491 mm (Table 16). A modal length was apparent at 550-599 mm with a secondary mode at 325-349 mm (Figure 16). Mean weight was 1.8 kg and K value was 1.15 (Table 16). Mean age was 15.6 yr (Table 17) and modal age was 20 yr (Figure 16). Total instantaneous mortality rate (Z) was estimated to be 0.26 (Figure 2).

Standard creel census

The areas (44 100 ha) generally fished in the McTavish Arm (south) in 1984 are presented in Figure 17. Total number of lake trout harvested was <2560 trout (Table 1). Maximum yield per utilized hectare was 0.06 fish/utilized hectare. Table 1 indicated that the number of fish harvested and yield per utilized hectare fluctuated during the 1970's but have remained constant since 1978. However the catch per unit effort has decreased from 1973 to 1984.

Mean length of lake trout retained by anglers from Bransons Lodge was 663 mm (Table 18) and modal length was 625-649 mm (Figure 18). Mean weight was 3.91 kg (Table 18). Mean age was 19.8 yr (Table 19) and modal age was 22 yr (Figure 18). Total instantaneous mortality rate (Z), estimated using data from kept fish only, was 0.31 (Table 1).

Evaluation and recommendation

Data from the gill net samples indicated that the mean length of lake trout from McTavish Arm (south) was significantly smaller ($P<0.05$) than that for trout caught in most other areas of Great Bear Lake but similar to that found for trout from McTavish Arm (north). The mean age was significantly younger ($P<0.05$) from all other areas surveyed except for that found for trout from McTavish Arm (north).

Mean length of lake trout from the standard creel census samples increased from 1974 to 1978 but subsequently decreased in 1984. If it is assumed that anglers from Bransons Lodge retain only the largest fish caught as shown in the intensive creel census samples from other areas, then the decrease in mean length may be due to a decrease in the availability of 'trophy quality' lake trout in southern McTavish Arm. Mean ages displayed the same pattern as described for mean lengths. Modal ages fluctuated between 1974 and 1984, however there is a marked absence of fish older than 24 yr in 1984 compared to previous years. Total instantaneous mortality rates increased significantly from 1978 to 1984, which is likely an indication of increased exploitation.

The stock of "trophy" size fish in McTavish Arm (south) was exhausted by 1972 (Falk et al. 1973). This conclusion was further supported by Yaremchuk (1986). The increase in mean length and age in the standard creel census samples during the 1970's is probably attributable to an increased release of smaller sized fish. The decrease in mean length and age and the increase in Z during this same time was an indication that the stock was still stabilizing. The continued decrease in 1984 of the length and age of trout and the increase in Z indicate that the stock is still in a decline and, as yet, has not stablized. This is supported further by the relatively small size and age of trout caught in the gill nets.

Therefore, in order to sustain the 'trophy quality' lake trout sport fishery in the McTavish Arm (south) and taking into consideration the past harvest levels, the decline in the size and age of trout, the increase in Z, and the continuation of the stock to stabilize, the initial total allowable harvest for lake trout from the area is estimated to be 1500 fish.

McVICAR ARM - NORTH (1984)

Experimental netting

Lake trout, lake cisco, and lake whitefish were the main species of fish netted (Figure 19). Lake trout comprised 57% of the total catch (Table 20). Catch per unit effort for lake trout was calculated to be 0.26 fish/100m gill net/24 h (Table 20).

Mean length of lake trout netted was 690 mm (Table 21) and modal length was 625-699 mm (Figure 20). Mean weight was 4.1 kg and K value was 1.16 (Table 21). Mean age was 20.4 yr (Table 22) and modal age was 22 yr (Figure 20). Total instantaneous mortality rate (Z) was estimated to be 0.22 (Figure 2).

Standard creel census

The areas (27 000 ha) generally fished by anglers from Great Bear Lodge (Bear Island and Neiland Bay Outpost Camps) are depicted in Figure 21. Total number of lake trout harvested from northern McVicar Arm in 1984 was 1626 fish. Yield per utilized hectare was 0.06 fish/utilized hectare. Table 1 indicated that the number of trout harvested may be similar to that found in 1979 while the catch per unit effort has increased.

Mean length of lake trout retained by anglers from Great Bear Lodge was 782 mm (Table 23) and modal length was between 600 mm and 699 mm (Figure 22). Mean weight was 6.23 kg (Table 23). Mean age was 23.5 yr (Table 24), however a unimodal age was not apparent (Figure 22). Total instantaneous mortality rate (Z), estimated using data from kept fish only, was 0.29 (Table 1).

Intensive creel census

The subareas utilized are depicted in Figures 23 and 25. There were 238 lake trout caught (Table 2) in 377 hours of fishing (Table 3) by anglers from Neiland Bay Outpost Camp. The majority of effort was expended in subarea 2 while the highest catch per unit effort was found in subarea 1 (Table 4).

There were 367 lake trout caught (Table 2) in 535 hours of fishing (Table 3) by anglers from Bear Island Outpost Camp. The majority of effort was expended in subarea 2 while the highest catch per unit effort was found in subarea 5 (Table 4).

The mean length of lake trout caught during the intensive creel census program were 61.5 cm and 70.5 cm from Bear Island and Neiland Bay Outpost Camps, respectively (Table 2). The only significant difference ($P<0.05$) in mean length of trout caught between subareas for Bear Island Outpost Camp was found in subarea 1 (Figure 26). There was no significant difference ($P>0.05$) in the size of trout caught between subareas for Neiland Bay Outpost Camp (Figure 24).

Data on the size of trout kept were too small for comparison to those trout either released or eaten for shorelunch at either Bear Island or Neiland Bay Outpost Camps.

Evaluation and recommendation

Data from the gill net samples indicated that there was a significant difference ($P<0.05$) in the mean length and age of trout from McVicar Arm (north) compared to that for trout from the other areas surveyed. Trout were larger than those from Dease and McTavish (north and south) arms but similar to trout from Smith Arm. The mean age was significantly older ($P<0.05$) than that for fish from McTavish Arm (north and south) but similar to that for trout from all other areas surveyed.

Mean length of lake trout from the standard creel census samples decreased during the 1970's but increased in 1984, as did modal lengths. Yaremchuk (1986) has suggested that the increase is probably due to a change in the lodge policy towards the retention of "trophy" fish only. The data from the intensive creel census indicates no difference in the size of trout kept and released by anglers from the Neiland Bay Outpost Camp although a difference was found for the Bear Island Outpost Camp. This may be an indication that the increase length in 1984 may be stabilizing. Mean age fluctuated from 1973 to 1984 while modal age increased. Heavy harvests of trout younger than 10 yr were taken in during the 1970's but not in 1984. Total instantaneous mortality rate decreased from 1973 to 1984.

There was no evidence during the 1970's that the trout stock in McVicar Arm (north) was stabilizing (Yaremchuk 1986). The large harvest of trout caused a decline in the mean length and age of lake trout in the late 1970's. Despite the small standard creel census sample size and the fact that the lodge policy changed to include the retention of only one "trophy" fish per angler, it is believed that the trout stock in northern McVicar Arm is stabilizing. The relatively large mean length and age of trout caught in the gill nets and the size of fish samples in the intensive creel census supports

this and indicates that a supply of 'trophy quality' trout is still available.

Therefore, in order to sustain the 'trophy quality' lake trout sport fishery in the McVicar Arm (north) and taking into consideration the past harvest levels, the relatively large mean length and age of trout, and the decrease in Z, and the probable stabilization of the trout population, the initial total allowable harvest for trout from the area is estimated to be 1500 fish.

SMITH ARM (1985)

Experimental netting

Lake whitefish and lake trout were the two main species of fish netted (Figure 27). Lake trout comprised 36% of the total catch (Table 25). Catch per unit effort for lake trout was estimated to be 0.50 fish/100 m gill net/24 h. (Table 25).

Mean length of lake trout netted was 680 mm (Table 26) and modal length was 650-674 mm (Figure 28). Mean weight was 3.3 kg and K value was 1.13 (Table 26). Mean age was 20.3 yr (Table 27) and modal age was 24 yr (Figure 28). Total instantaneous mortality rate (Z) was calculated to be 0.27 (Figure 2).

Standard creel census

The areas (49 600 ha) generally fished by anglers from Trophy Lodge and Bransons Outpost Camp are depicted in Figure 29. Total number of lake trout harvested was >2965 fish; this did not include the harvest by anglers from Bransons Outpost Camp (Table 1). Minimum yield per utilized hectare was 0.06 fish/utilized hectare. Table 1 indicated that the number of trout harvested is larger than that found in 1980 and the catch per unit effort has decreased since that time.

Mean length of lake trout retained by anglers from Trophy Lodge was 655 mm (Table 28) and modal length was 650-674 mm (Figure 30). Mean weight was 3.41 kg (Table 28). Mean age was 18.6 yr (Table 29) and modal age was 15 yr (Figure 30). Total instantaneous mortality rate (Z), calculated using data from kept fish only, was 0.26 (Table 1).

Intensive creel census

The subareas utilized are depicted in Figure 31. There were 1520 lake trout caught (Table 2) in 1847 hours of fishing (Table 3). The majority of effort was expended in subarea 1 while the highest catch per unit effort was found in subarea 4 (Table 4).

The mean length of lake trout caught during the intensive creel census program was 66.0 cm (Table 2). There was no significant difference ($P>0.05$) in the size of trout caught between subareas (Figure 32), although the mean length of trout from subarea 5 was relatively larger than that reported for all other subareas.

Lake trout eaten for shorelunch were significantly smaller ($P<0.05$) than those fish kept (61.1 cm and 71.1 cm, respectively).

Evaluation and recommendation

There was a significant difference ($P<0.05$) in the mean length of lake trout between Smith Arm and Dease Arm and McTavish Arm (north and south) as well as in mean age with trout from McTavish Arm (north and south). The majority of trout were between 575 mm and 724 mm and ages 16 yr and 24 yr.

Mean length of lake trout from the standard creel census samples fluctuated between 1973 and 1985. Modal length remained relatively unchanged during this same time period while secondary modes of smaller fish appeared and disappeared. Mean age has remained relatively constant since 1980 while modal age has decreased from 1980 to 1985; secondary modal ages appeared and disappeared from 1973 to 1985. There were notable fewer fish older than 27 yr in 1985. Total instantaneous mortality rate fluctuated from 1973 to 1985.

Yaremchuk (1986) believed that the lake trout stock in the Smith Arm had stabilized by 1980 and that the variation in mean length and age resulted from the presence and absence of secondary modes consisting of smaller and younger fish. These secondary modes were believed due to angler selectivity. The intensive creel census indicates that anglers from Trophy Lodge retain only the largest lake trout caught which probably is the result of the increase in mean and modal length in 1985. The significant decrease in the modal age in the standard creel census sample, the small secondary mode in the gill net catch, and the relatively high Z may be the result of continued comparatively higher harvests and that the trout population has yet not completely stabilized. However, the gill net catch indicated that there is a supply of 'trophy quality' trout still available.

Therefore, in order to sustain the 'trophy quality' lake trout sport fishery in the Smith Arm and taking into consideration the past harvest levels, the relatively large length and age of trout, and the probable stabilization of the population, the initial total allowable harvest for trout from the area is estimated to be 2 500 fish.

PROGRAM EVALUATION AND RECOMMENDATIONS

Yaremchuk (1986) stated that the standard creel census program is a poor method for monitoring the trout populations due to the sampling bias introduced by the high and varying release rate. An unknown proportion of the observed advances in mean length and age may be due to the release of a greater proportion of smaller, younger fish rather than to increases in the population means. Also changes within the standard creel census program over time hinders the interpretation of size and age data. Positive trends in mean length and age may be due to changes in sampling bias towards

larger, older fish and not to effects of exploitation. The effects of depletion of exploited stocks on sample length and age distributions also may be masked in the data collected from a standard creel census program by the presence of fish from new areas into which the fishery has expanded. The alternate method introduced in 1984 was the intensive creel census program which collected data on all fish caught and not just those kept. The data from the program indicated that, in fact, the size of trout kept (as reported in the standard creel census) was usually significantly larger than that reported for all trout caught thus proving that the standard creel census data is often unreliable when determining the effects of exploitation on the population. Therefore, it is recommended that the intensive creel census program be conducted to monitor the effects of exploitation with a possible frequency of every five years. Sampling of the retain (kept) catch, to obtain length, weight, and age data for the determination of relations between these parameters and for catch curve analysis, can be obtained within this program.

Reporting the data from the intensive creel census program by subarea indicated that there are size differences within a management (stock) area. This may be an indication of more than one stock within an area. Future examination of stock identification including the collection of genetic and meristic/morphometrics data would be required to further delineate trout stocks from Great Bear Lake.

Harvest estimates are necessary for the prediction of population responses and the regulation of the fishery (Yaremchuk 1986). Data from the intensive creel census program suggests that there may be more than one trout stock within a management area; therefore annual harvest statistics of each management area should be collected on a subarea basis. Thompson et al. (1988) suggests that an angler diary program may be a better method to obtain harvest statistics.

Sampling of the trout population with gill nets supported the data collected in the intensive creel census and provided additional measurements of various population parameters which were not able to be determined from standard creel census samples. These detailed studies of the population dynamics of lake trout are required to measure changes in population parameters and to determine optimum yield. Possible frequency of sampling is every 5-10 years.

SUMMARY

1. Standard creel census is often biased due to angler selectivity and an intensive creel census would be more reliable when determining the effects of exploitation on the population. It is suggested that it be conducted every 5 years.

2. Intensive creel census data indicates that there is a significant difference in the size of fish between its uses as well as between subareas within a management area.

3. Gill net data provide information on various population parameters not available from creel census data. It is suggested that data be collected on a frequency of 5-10 years.

4. Annual monitoring of harvest for each management area should be conducted on a subarea basis.

5. Recommended initial total allowable harvest (TAH) for lake trout by management area is as follows:

Dease Arm -	2 000 fish
McTavish Arm (north)-	1 500 fish
McTavish Arm (south)-	1 500 fish
McVicar Arm (north)-	1 500 fish
Smith Arm -	2 500 fish

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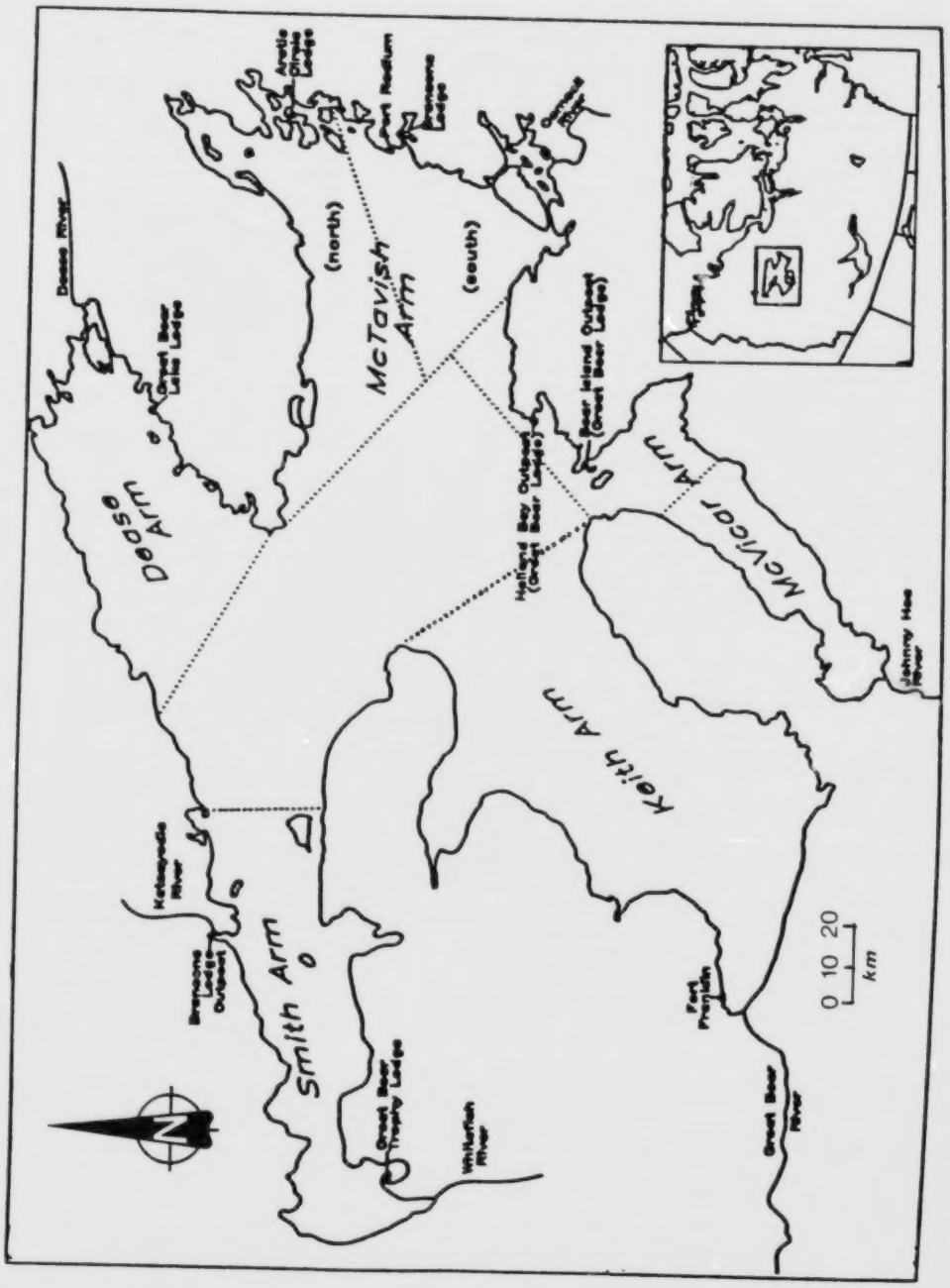


Figure 1. Map of Great Bear Lake depicting management areas for the lake trout sport fishery.

Table 1. Summary of harvest, catch per unit effort (CPUE), and instantaneous total mortality rate (Z) for each lake trout stock, Great Bear Lake, 1972-1985.

Area	Year	Harvest (no.)		CPUE		Total Instantaneous Mortality Rate (Z)
		Total	/Utilized hectare	No. Caught /Angler-hour	No. Caught /Angler-day	
Dease Arm	1972	6828	0.12	-	-	0.34
	1973	5494	0.10	0.74	3.68	0.08
	1977	3413	0.06	0.56	3.30	0.27
	1984	3932	0.07	1.05	6.11	0.39
McTavish Arm (North)	1975	2325	-	1.75	10.90	0.20
	1984	>2345 [1]	>0.05 [1]	1.01	5.38	0.24
McTavish Arm (South)	1972	3635	0.07	-	-	0.36
	1973	3716	0.07	0.75	4.51	-
	1974	3963	0.08	0.93	5.20	0.12
	1978	1935	0.04	0.83	5.40	0.17
	1984	<2564 [2]	<0.06 [2]	0.74	4.36	0.31
McVicar Arm (North)	1972	2496	0.21	-	-	0.19
	1973	2292	0.19	0.66	5.17	0.50
	1974	1757	0.17	-	-	-
	1979	>1026 [3]	>0.09 [3]	0.78	3.83	-
	1984	1626	0.06	1.02	5.72	0.29
Smith Arm	1972	3709	0.12	-	-	-
	1973	3850	0.12	0.83	4.49	-
	1976	2758	0.09	0.65	3.10	0.25
	1980	2497	0.07	1.23	5.40	0.22
	1985	>2965 [4]	>0.06 [4]	0.88	4.99	0.26

[1]Does not include harvest from Arctic Circle Outpost Camp and harvest by anglers from other lodges (Bransons and Great Bear Lake lodges).
[2]Unknown portion of total harvest was removed from McTavish Arm (north).
[3]Only includes harvest from one camp.
[4]Does not include harvest from Bransons Outpost Camp.

Table 2. Summary of catch and mean length, by use, of lake trout caught in the intensive creel census, Great Bear Lake, 1984-85.

Area	Subarea	Kept		Released		Shore Lunch		Total	
		No.	Mean Length (cm)	No.	Mean Length (cm)	No.	Mean Length (cm)	No.	Mean Length (cm)
Dease Arm (Great Bear Lake Lodge)	1	2	64.00	39	61.97	4	61.25	45	62.0
	2	28	63.07	150	57.19	27	55.41	205	57.77
	3	15	70.47	104	55.73	46	54.63	165	56.77
	4	18	71.61	171	66.19	6	63.33	195	66.60
	Area Total	63	67.30	464	60.61	83	55.83	610	60.65
North McTavish Arm (Arctic Circle Lodge)	1	4	63.25	20	50.60	11	46.55	35	50.77
	2	100	61.44	996	47.29	161	47.19	1257	48.40
	3	4	76.25	34	44.91	8	44.63	46	47.59
	4	1	55.00	24	45.75	3	50.33	28	46.57
	5	10	64.80	117	62.68	3	59.33	130	62.76
	Area Total	119	62.24	1191	48.76	186	47.29	1496	49.64
Mcvicar Arm (Great Bear Lodge: Neiland Bay Outpost)	1	3	77.33	92	70.36	16	67.06	111	70.07
	2	3	65.67	99	71.72	15	64.73	117	70.67
	3	-	-	9	74.78	1	58.00	10	73.10
	4	-	-	-	-	-	-	-	-
	Area Total	6	71.50	200	71.23	32	65.69	238	70.49
McVicar Arm (Great Bear Lodge: Bear Island Outpost)	1	2	63.50	26	55.85	4	51.50	32	55.78
	2	1	68.08	69	62.98	25	63.80	207	63.40
	3	-	-	45	60.76	5	61.00	50	60.78
	4	3	76.33	38	61.53	9	58.22	50	61.82
	5	-	-	10	60.30	1	52.00	11	59.55
	Unknown	-	-	15	53.93	2	42.50	17	52.59
	Area Total	18	68.94	303	61.32	46	60.15	367	61.54
Smith Arm (Trophy Lodge)	1	57	68.33	501	63.73	68	60.16	626	63.76
	2	16	69.88	124	64.80	17	58.88	157	64.68
	3	14	70.86	143	66.09	17	59.29	174	65.81
	4	21	74.43	248	64.89	23	62.96	292	65.42
	5	22	76.27	228	72.64	20	65.85	270	72.43
	Unknown	-	-	1	60.00	-	-	1	60.00
	Area Total	130	71.12	1245	65.97	145	61.14	1520	65.95

Table 3. Summary of effort expended during the intensive creel census, Great Bear Lake, 1984-85.

Area	Effort	Subarea						Area Total
		1	2	3	4	5	unknown	
Dease Arm (Great Bear Lake Lodge)	Anglers	6	33	53	22	-	-	114
	Angler Days	6	49	67	24	-	-	146
	Angler Hours	20.0	224.0	270.0	107.0	-	-	621.0
North McTavish Arm (Arctic Circle Lodge)	Anglers	9	71	11	4	10	-	105
	Angler Days	14	254	11	6	14	-	299
	Angler Hours	57.0	1309.0	86.0	22.0	77.5	-	1551.5
McVicar Arm (Great Bear Lodge: Neiland Bay Outpost)	Anglers	17	16	4	-	-	-	37
	Angler Days	25	39	4	-	-	-	68
	Angler Hours	136.0	225.0	16.0	-	-	-	377.0
McVicar Arm (Great Bear (Lodge: Bear Island Outpost)	Anglers	9	18	11	11	2	2	53
	Angler Days	13	57	14	18	2	2	106
	Angler Hours	68.0	303.0	77.0	75.0	12.0	-	535.0
Smith Arm (Great Bear Trophy Lodge)	Anglers	78	33	36	42	44	2	235
	Angler Days	148	41	52	57	55	4	357
	Angler Hours	779.0	212.0	234.5	298.5	323.5	-	1847.0

Table 4. Summary of catch per unit effort for lake trout in the intensive creel census, Great Bear Lake, 1984-85.

Area	Subarea	Lake Trout (number) /Angler	/Angler Day	/Angler Hour
Dease Arm (Great Bear Lake Lodge)	1	7.50	7.50	2.25
	2	6.21	4.18	0.92
	3	3.11	2.46	0.61
	4	8.86	8.13	1.82
	Area Total	5.35	4.12	0.98
North McTavish Arm (Arctic Circle Lodge)	1	3.89	2.50	0.61
	2	17.70	4.95	0.96
	3	4.18	4.18	0.55
	4	7.00	4.67	1.32
	5	13.00	9.29	1.68
	Area Total	14.25	5.00	0.97
Mcvicar Arm (Great Bear Lodge: Neiland Bay Outpost)	1	6.53	4.44	0.82
	2	7.31	3.00	0.53
	3	2.50	2.50	0.63
	4	-	-	-
	Area Total	6.43	3.50	0.64
McVicar Arm (Great Bear Lodge: Bear Island Outpost)	1	3.56	2.46	0.47
	2	11.50	3.63	0.68
	3	4.55	3.57	0.65
	4	4.55	2.78	0.67
	5	5.50	5.50	0.92
	Unknown	8.50	8.50	-
	Area Total	6.92	3.46	0.69
Smith Arm (Trophy Lodge)	1	8.03	4.23	0.80
	2	4.76	3.83	0.74
	3	4.83	3.35	0.74
	4	6.95	5.12	0.98
	5	6.14	4.91	0.84
	Unknown	0.50	0.25	-
	Area Total	6.47	4.26	0.82

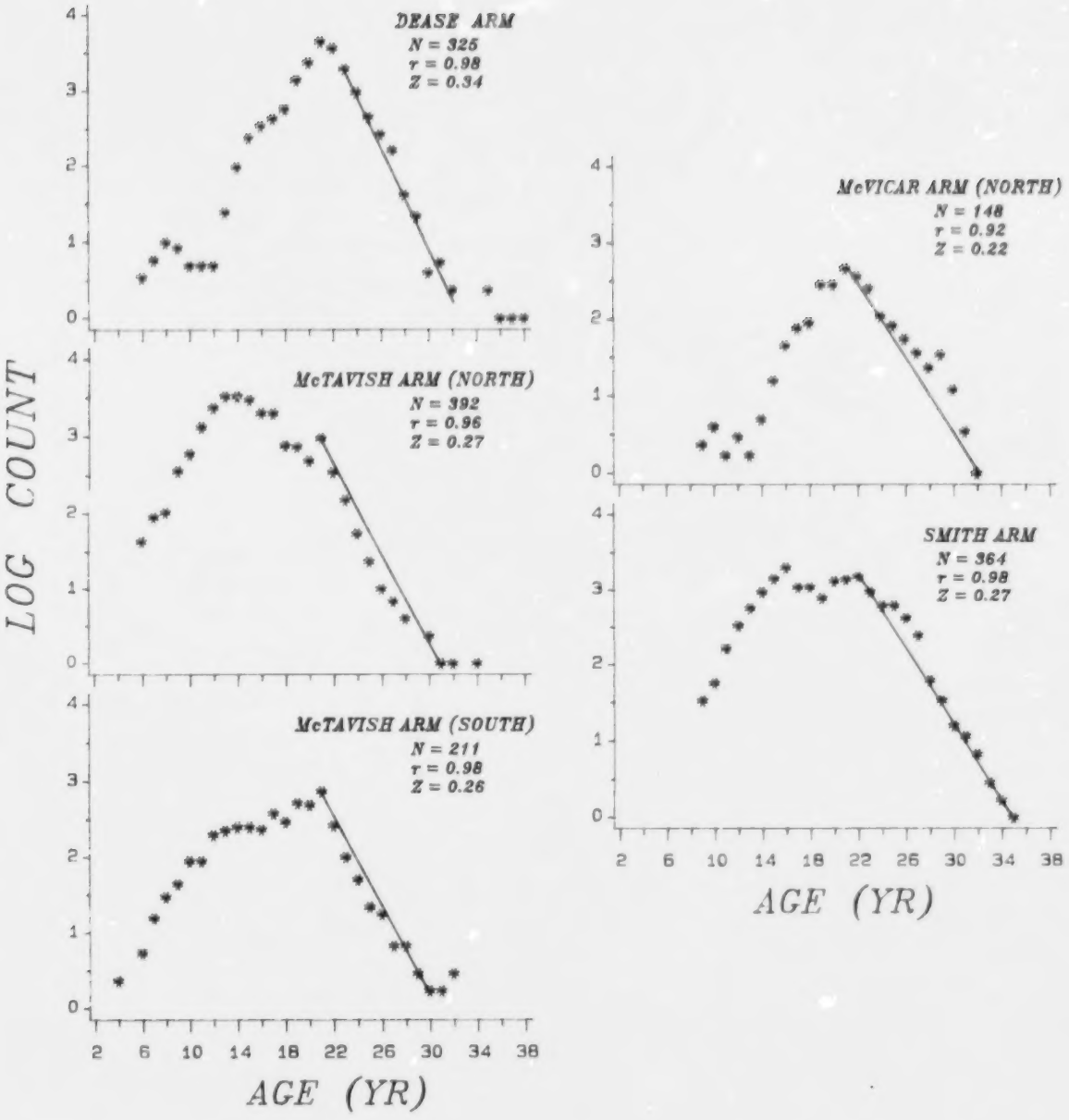


Figure 2. Catch curves depicting instantaneous total mortality rate for lake trout, Great Bear Lake, 1984–85.

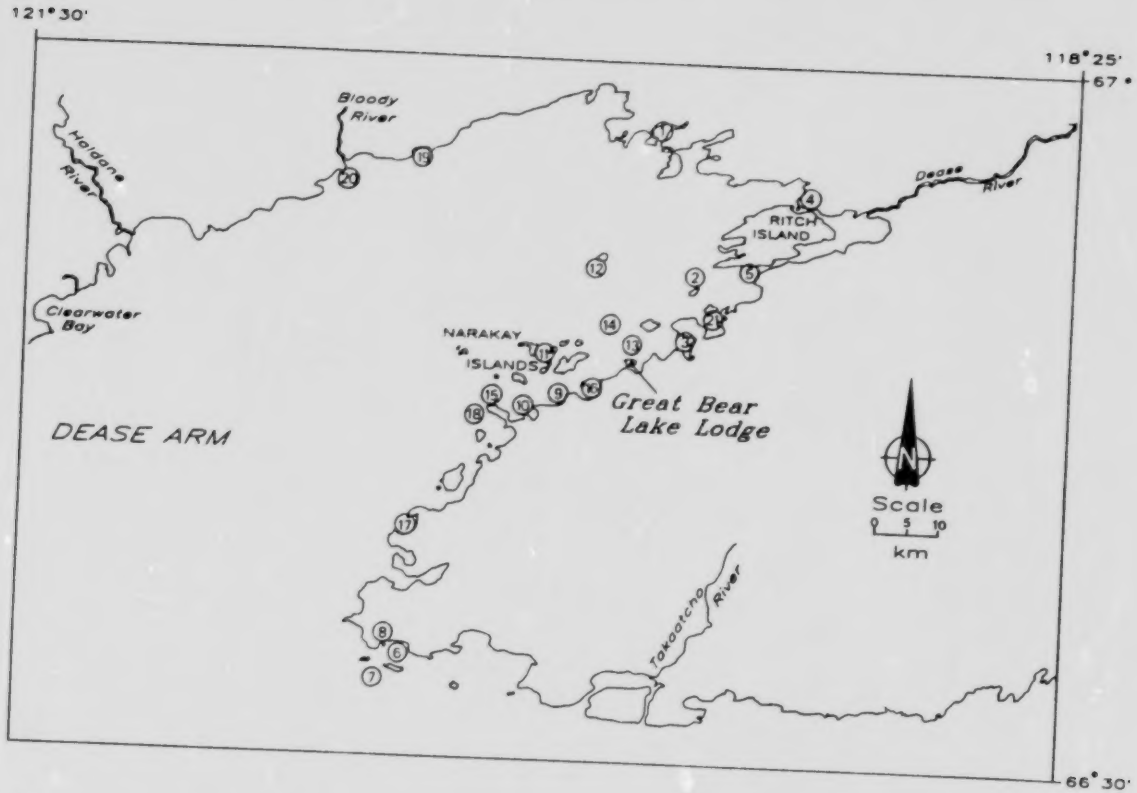


Figure 3. Experimental net locations, Dease Arm, Great Bear Lake, 1984.

Table 5. Catch and catch per unit effort (CPUE) for fish caught by experimental gill nets, Nease Arm, Great Bear Lake, 1984.

		Mesh Size (mm)					Total Catch	CPUE[1]
		38	64	89	114	139		
Lake trout	No.	56	75	61	52	32	276	0.77
	%	20.3	27.2	22.1	18.8	11.6	78.6	
Lake whitefish	No.	1	18	13	11	6	49	0.14
	%	2.0	36.7	26.5	22.4	12.2	14.0	
Round whitefish	No.	3	-	-	-	-	3	<0.01
	%	100.0	-	-	-	-	0.9	
Lake cisco	No.	18	2	-	-	-	20	0.06
	%	90.0	10.0	-	-	-	5.7	
Arctic grayling	No.	3	-	-	-	-	3	<0.01
	%	100.0	-	-	5.7	-	0.9	
Total	No.	81	95	74	632	380	351	0.98
	%	23.1	27.1	21.1	17.9	10.8		

[1]No. fish/100 m of gillnet/24 h

Table 6. Biological data by length interval for lake trout caught by experimental gill nets, Dease Arm, Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
200	-	-	-	-	-	-	1	223	100	-	0.90	0	3	222	100	0	0.92	0
250	-	-	-	-	-	-	-	-	-	-	-	-	4	257	175	29	1.04	0
325	2	337	425	35	1.11	0	-	-	-	-	-	-	2	337	425	35	1.11	0
350	-	-	-	-	-	-	2	354	500	0	1.13	0	3	359	500	0	1.13	0
375	1	396	700	-	1.13	0	-	-	-	-	-	-	1	396	700	-	1.13	0
400	3	420	800	50	1.08	0	1	412	700	-	1.00	0	4	418	775	65	1.06	0
425	1	436	1150	-	1.39	0	1	427	800	-	1.03	0	3	434	975	247	1.21	0
450	1	462	1200	-	1.22	0	-	-	-	-	-	-	4	458	1200	-	1.22	0
475	1	478	1000	-	0.92	0	1	489	1400	-	1.20	0	2	484	1200	283	1.06	0
500	1	512	1250	-	0.93	100	1	503	1350	-	1.06	0	4	508	1300	71	1.00	25
525	3	538	1650	87	1.06	33	1	540	1800	-	1.14	0	7	539	1688	103	1.08	14
550	5	560	1820	182	1.04	60	6	559	2025	353	1.16	33	20	562	1932	295	1.10	25
575	5	584	2130	387	1.06	100	1	584	1950	-	0.98	100	10	584	2100	354	1.05	60
600	10	609	2535	383	1.12	100	3	612	2383	144	1.04	100	30	610	2500	343	1.10	43
625	11	636	2718	460	1.06	100	5	641	3040	691	1.15	100	49	636	2819	541	1.09	33
650	6	660	3025	342	1.05	100	3	664	2483	437	0.85	100	48	663	2844	440	0.98	19
675	5	690	3970	805	1.20	100	3	687	3150	391	0.97	100	22	688	3663	771	1.12	36
700	-	-	-	-	-	-	1	719	3450	-	0.93	100	19	708	3450	-	0.93	5
725	2	725	3950	354	1.04	100	-	-	-	-	-	-	15	733	3950	354	1.04	13
750	-	-	-	-	-	-	2	754	4625	106	1.08	100	4	757	4625	106	1.08	50
775	-	-	-	-	-	-	-	-	-	-	-	-	2	794	-	-	-	0
875	-	-	-	-	-	-	-	-	-	-	-	-	1	876	-	-	-	0
1025	-	-	-	-	-	-	1	1033	13000	-	1.18	100	2	1038	13000	-	1.18	50
1075	-	-	-	-	-	-	-	-	-	-	-	-	1	1092	-	-	-	0
1175	-	-	-	-	-	-	-	-	-	-	-	-	1	1194	-	-	-	0
TOTAL	57						33						261					
MEAN		588	2358	1005	1.09			594	2612	2168	1.06			625	2307	1583	1.07	

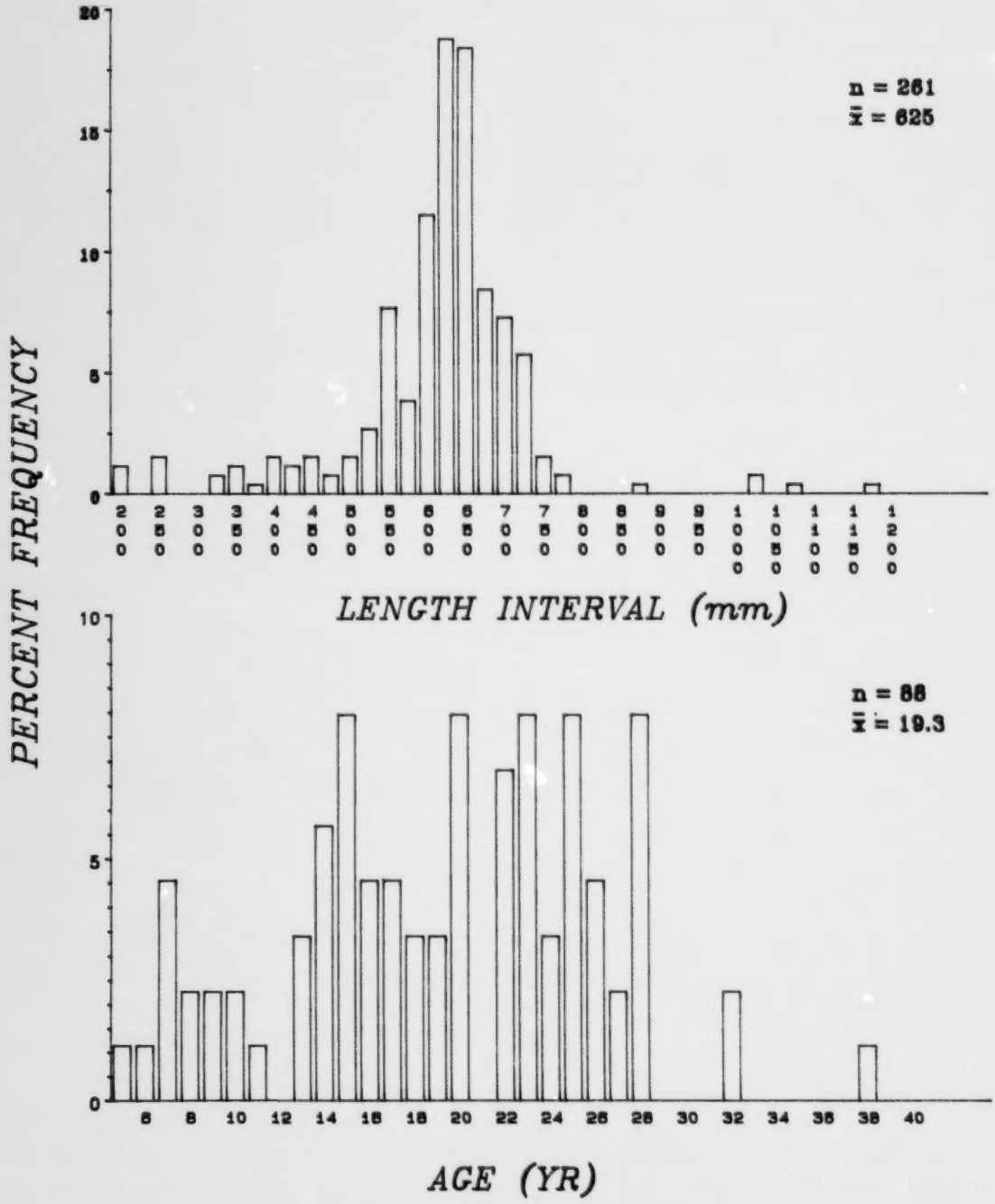


Figure 4. Length and age frequency distributions for lake trout caught by experimental nets, Dease Arm, Great Bear Lake, 1984.

Table 7. Biological data by age group for lake trout caught by experimental gill nets, Dease Arm, Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED						
	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	220	-	100	-	0.94	0
6	-	-	-	-	-	-	-	1	223	-	100	-	0.90	0	1	223	-	100	-	0.90	0
7	1	335	-	450	-	1.20	0	-	-	-	-	-	-	-	4	267	48	213	160	0.98	0
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	257	8	200	0	1.18	0
9	-	-	-	-	-	-	-	2	354	4	500	0	1.13	0	2	354	4	500	0	1.13	0
10	1	423	-	850	-	1.12	0	1	427	-	800	-	1.03	0	2	425	3	825	35	1.08	0
11	1	339	-	400	-	1.03	0	-	-	-	-	-	-	-	1	339	-	400	-	1.03	0
13	3	479	92	1233	551	1.09	33	-	-	-	-	-	-	-	3	479	92	1233	551	1.09	33
14	3	465	61	1233	480	1.19	0	2	522	26	1575	318	1.10	0	5	488	55	1370	419	1.16	0
15	3	565	33	2100	500	1.15	67	4	610	67	2588	798	1.12	75	7	591	56	2379	685	1.13	71
16	4	553	130	2313	1723	1.14	50	-	-	-	-	-	-	-	4	553	130	2313	1723	1.14	50
17	1	574	-	1750	-	0.93	100	3	570	34	2017	448	1.09	33	4	571	28	1950	389	1.05	50
18	2	566	15	1750	141	0.97	50	1	489	-	1400	-	1.20	0	3	540	45	1633	225	1.04	33
19	-	-	-	-	-	-	-	3	648	23	3167	822	1.17	100	3	648	23	3167	822	1.17	100
20	4	592	18	2163	335	1.05	100	3	585	17	2067	202	1.03	67	7	589	17	2121	269	1.04	86
22	5	601	53	2200	504	1.00	80	1	573	-	2550	-	1.36	100	6	596	48	2258	473	1.06	83
23	5	631	33	2800	314	1.12	100	2	640	18	2675	106	1.02	100	7	633	28	2764	267	1.09	100
24	3	660	36	3250	953	1.11	100	-	-	-	-	-	-	-	3	660	36	3250	953	1.11	100
25	6	646	42	2908	525	1.08	100	1	719	-	3450	-	0.93	100	7	656	47	2986	521	1.06	100
26	2	626	28	3200	283	1.30	100	2	665	29	2600	495	0.88	100	4	645	32	2900	478	1.09	100
27	1	579	-	1900	-	0.98	100	1	754	-	4550	-	1.06	100	2	667	124	3225	1874	1.02	100
28	4	646	28	2825	307	1.06	100	3	667	19	2717	645	0.93	100	7	655	25	2779	435	1.00	100
32	2	645	59	3500	1626	1.26	100	-	-	-	-	-	-	-	2	645	59	3500	1626	1.26	100
38	-	-	-	-	-	-	-	1	1033	-	13000	-	1.18	100	1	1033	-	13000	-	1.18	100
TOTAL	51							31							88						
MEAN		581	92	2301	975	1.10			594	141	2606	2178	1.06			563	139	2262	1592	1.08	
MEAN AGE	20.6							19.4							19.3						

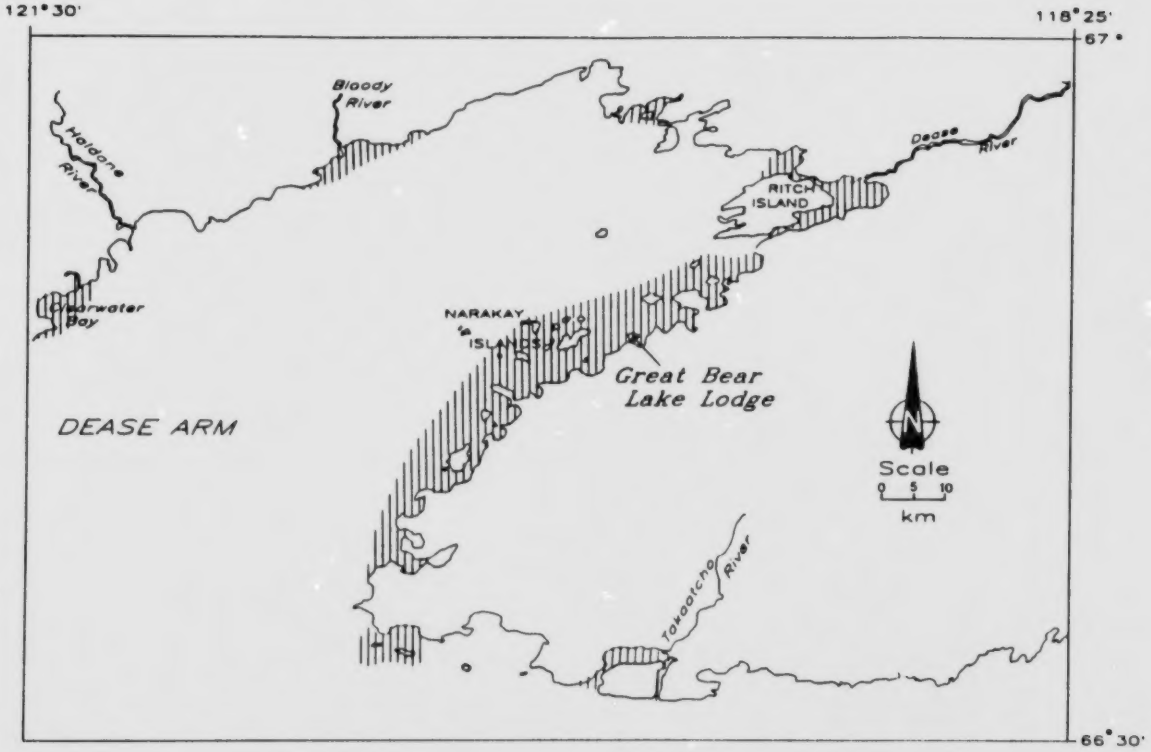


Figure 5. Areas generally fished in Dease Arm, Great Bear Lake, 1984.

Table 8. Biological data by length interval for angled and retained lake trout, Dease Arm, (Great Bear Lake Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
425	1	434	850	-	1.04	0	-	-	-	-	-	-	1	434	850	-	1.04	0
450	2	466	1125	35	1.11	0	1	470	1300	-	1.25	0	3	467	1183	104	1.16	0
500	-	-	-	-	-	-	4	511	1475	96	1.10	0	4	511	1475	96	1.10	0
525	1	546	1850	-	1.14	0	2	546	2075	389	1.27	0	4	545	2063	278	1.27	0
550	8	567	2369	284	1.30	75	4	559	2313	514	1.32	50	12	564	2350	352	1.31	67
575	11	586	2591	368	1.29	73	12	585	2529	342	1.26	67	24	586	2560	340	1.28	67
600	26	613	3088	356	1.34	88	18	614	2833	351	1.22	89	48	613	3016	384	1.31	83
625	31	635	3200	324	1.25	97	21	637	3288	385	1.27	95	53	636	3243	350	1.26	94
650	23	659	3450	293	1.20	91	13	659	3692	450	1.29	100	36	659	3538	371	1.24	94
675	12	684	3967	314	1.24	100	19	686	3926	595	1.22	100	31	685	3942	499	1.23	100
700	10	713	4285	486	1.18	100	10	712	3995	483	1.11	100	24	712	4148	505	1.15	88
725	6	736	4292	431	1.08	100	6	733	4692	1110	1.19	100	12	734	4492	829	1.13	100
750	5	758	4330	327	0.99	100	4	765	5088	394	1.14	100	9	761	4667	521	1.06	100
775	-	-	-	-	-	-	4	783	4963	111	1.04	100	5	782	5010	143	1.05	80
800	2	815	5450	212	1.01	100	2	813	5425	530	1.01	100	4	814	5438	330	1.01	100
825	-	-	-	-	-	-	1	833	6000	-	1.04	100	1	833	6000	-	1.04	100
850	-	-	-	-	-	-	1	858	5900	-	0.93	100	3	861	7533	1625	1.18	67
875	1	884	9400	-	1.36	100	1	885	8300	-	1.20	100	4	888	8225	885	1.18	50
925	3	939	9450	1429	1.14	100	-	-	-	-	-	-	4	942	9588	1199	1.15	75
950	1	966	11650	-	1.29	100	1	952	8700	-	1.01	100	2	959	10175	2086	1.15	100
975	-	-	-	-	-	-	-	-	-	-	-	-	2	985	11450	778	1.20	0
1000	-	-	-	-	-	-	1	1004	10900	-	1.08	100	1	1004	10900	-	1.08	100
TOTAL	143						125						287					
MEAN		654	3562	1446	1.23			662	3620	1369	1.21			664	3730	1648	1.23	

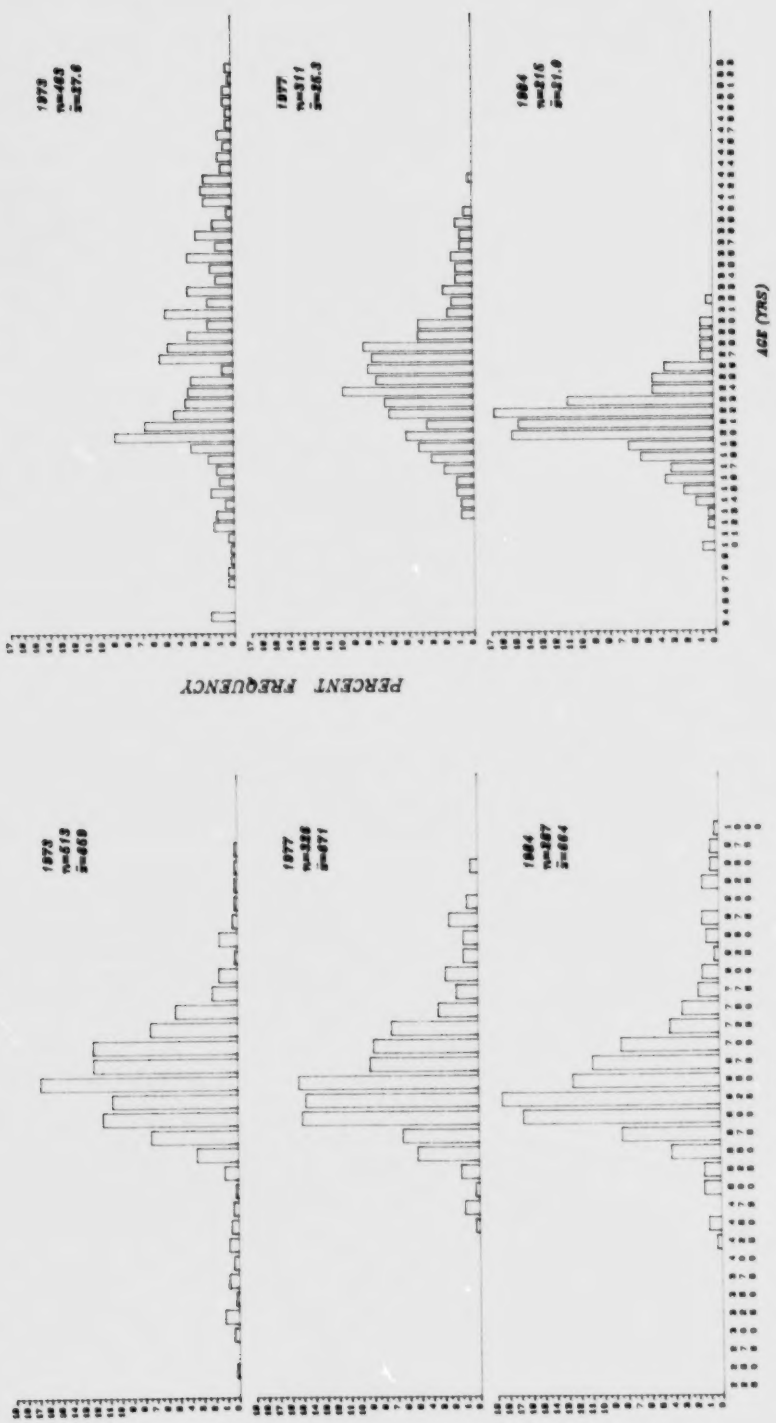


Figure 6. Length and age frequency distributions for angled and retained lake trout, Dease Arm, Great Bear Lake, 1973–1984.

Table 9. Biological data by age group for angled and retained lake trout, Dease Arm, (Great Bear Lake Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES N	MALES LENGTH(MM) MEAN	MALES LENGTH(MM) SD	MALES WEIGHT(G) MEAN	MALES WEIGHT(G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES LENGTH(MM) SD	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED LENGTH(MM) SD	COMBINED WEIGHT(G) MEAN	COMBINED WEIGHT(G) SD	COMBINED K	COMBINED % MAT
10	2	446	17	975	177	1.09	0	-	-	-	-	-	-	-	2	446	17	975	177	1.09	0
12	1	572	-	2100	-	1.12	0	-	-	-	-	-	-	-	1	572	-	2100	-	1.12	0
13	-	-	-	-	-	-	-	1	563	-	2400	-	1.34	0	1	563	-	2400	-	1.34	0
14	2	582	3	2375	177	1.21	50	1	655	-	3800	-	1.35	100	3	606	42	2850	832	1.25	67
15	3	564	80	1867	725	1.01	33	2	547	47	1625	389	0.98	0	5	557	62	1770	564	1.00	20
16	3	607	59	2683	825	1.17	67	5	646	115	3000	1387	1.06	80	8	631	94	2881	1150	1.10	75
17	3	662	94	3533	833	1.24	100	4	644	59	3575	1210	1.31	75	7	652	69	3557	982	1.28	86
18	5	654	64	3470	855	1.22	80	7	644	82	3114	1038	1.15	71	12	648	72	3263	942	1.18	75
19	7	623	24	3150	482	1.30	71	7	675	114	3764	1530	1.18	86	14	649	83	3457	1136	1.24	79
20	19	631	40	3142	410	1.26	100	14	652	72	3207	989	1.13	86	33	640	56	3170	702	1.20	94
21	13	661	50	3377	600	1.16	85	17	638	52	3238	746	1.23	88	32	649	52	3334	676	1.21	88
22	19	650	69	3672	1530	1.31	100	16	669	65	3611	864	1.19	100	36	662	69	3692	1273	1.25	100
23	13	639	24	3408	542	1.30	92	11	697	82	4286	1791	1.22	100	24	666	64	3810	1322	1.26	96
24	6	674	46	3590	613	1.19	83	3	652	31	3483	189	1.27	100	10	654	55	3406	622	1.24	80
25	4	650	71	3463	1071	1.24	100	4	641	17	3463	680	1.31	75	10	662	85	3945	1989	1.29	89
26	4	677	51	3825	845	1.22	100	4	753	170	5913	3416	1.32	100	8	715	123	4869	2560	1.27	100
27	-	-	-	-	-	-	-	2	617	74	3250	495	1.41	100	2	617	74	3250	495	1.41	100
28	1	680	-	3600	-	1.14	100	1	658	-	3050	-	1.07	100	2	669	16	3325	389	1.11	100
29	1	684	-	4400	-	1.37	100	1	640	-	3250	-	1.24	100	2	662	31	3825	813	1.31	100
30	1	665	-	3650	-	1.24	100	1	717	-	5100	-	1.38	100	2	691	37	4375	1025	1.31	100
32	1	948	-	10300	-	1.21	100	-	-	-	-	-	-	-	1	948	-	10300	-	1.21	100
TOTAL	108							101							215						
MEAN		642	67	3354	1165	1.24			658	79	3539	1353	1.20			651	75	3473	1313	1.23	
MEAN AGE	21.0							21.0							21.0						

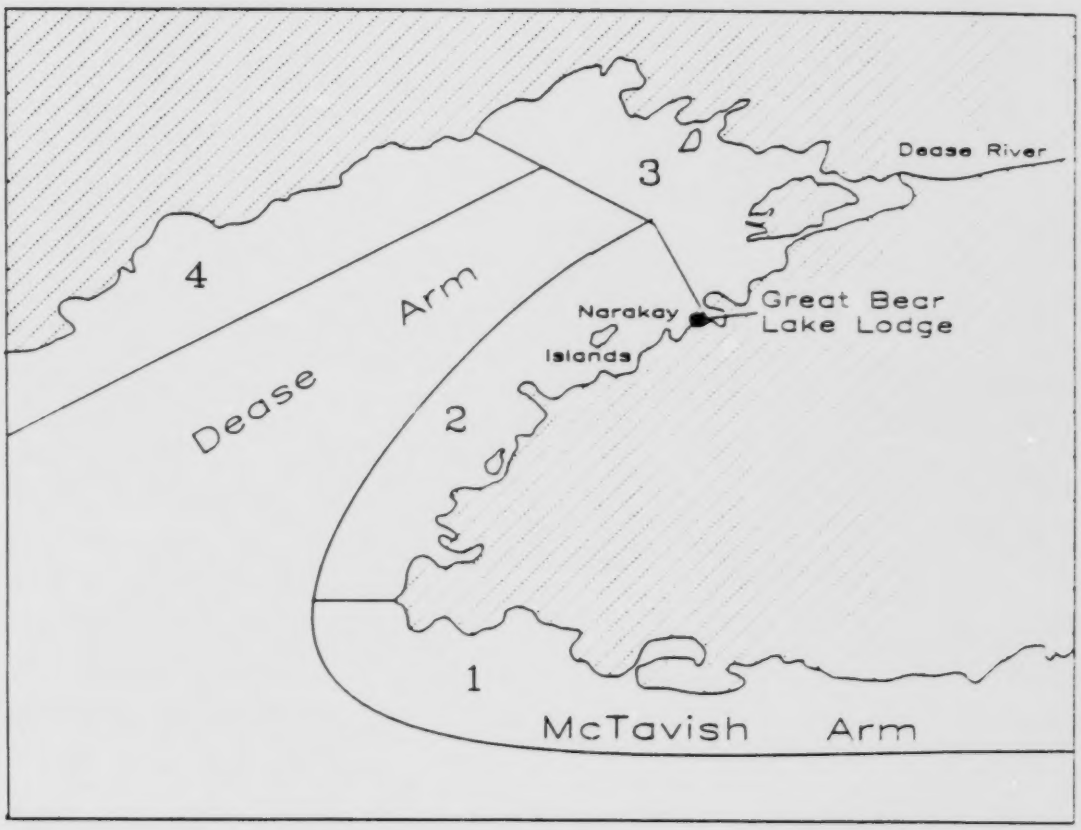


Figure 7. Subarea locations used in the intensive creel census program Dease Arm, Great Bear Lake, 1984.

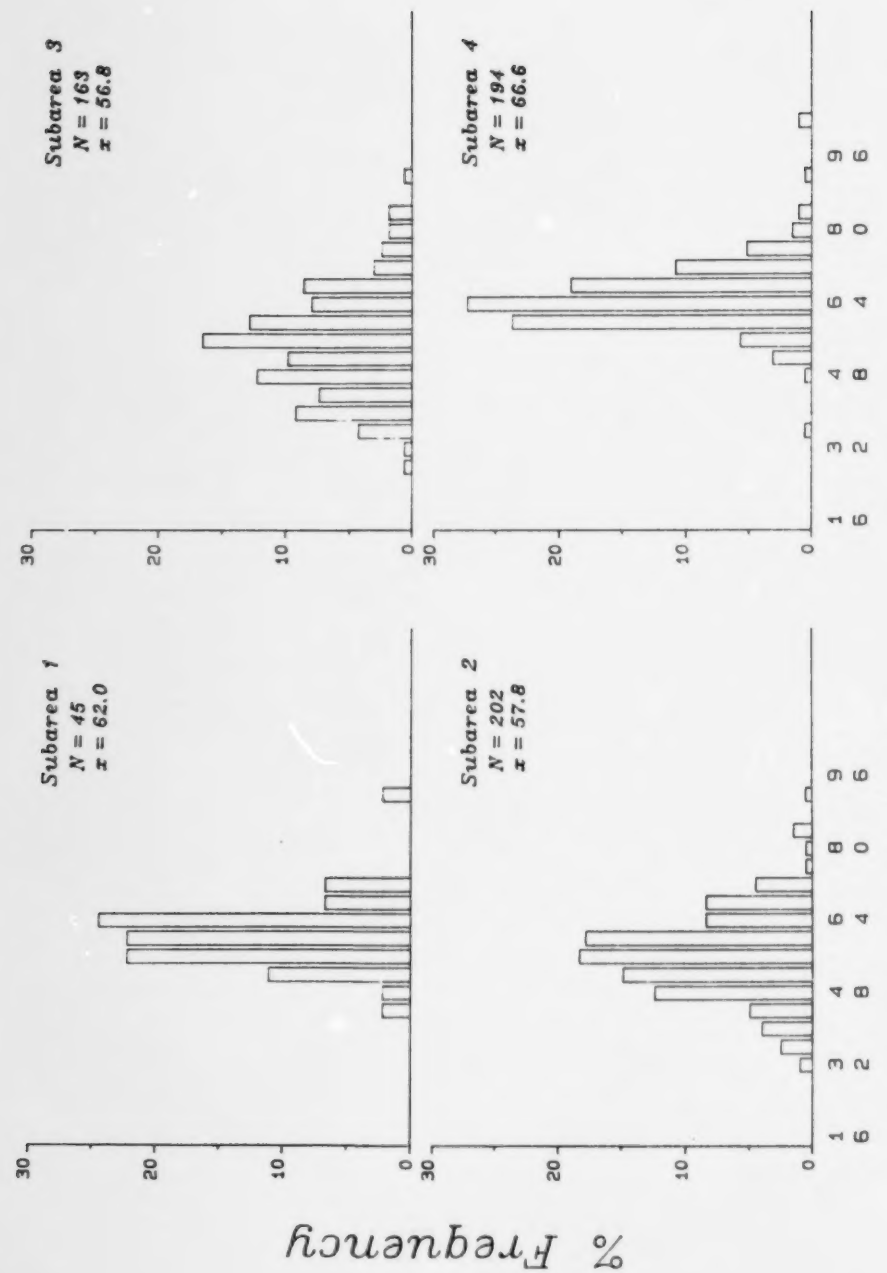


Figure 8. Length frequency distributions by subarea for lake trout caught by angling, Dease Arm (north), Great Bear Lake, 1984.

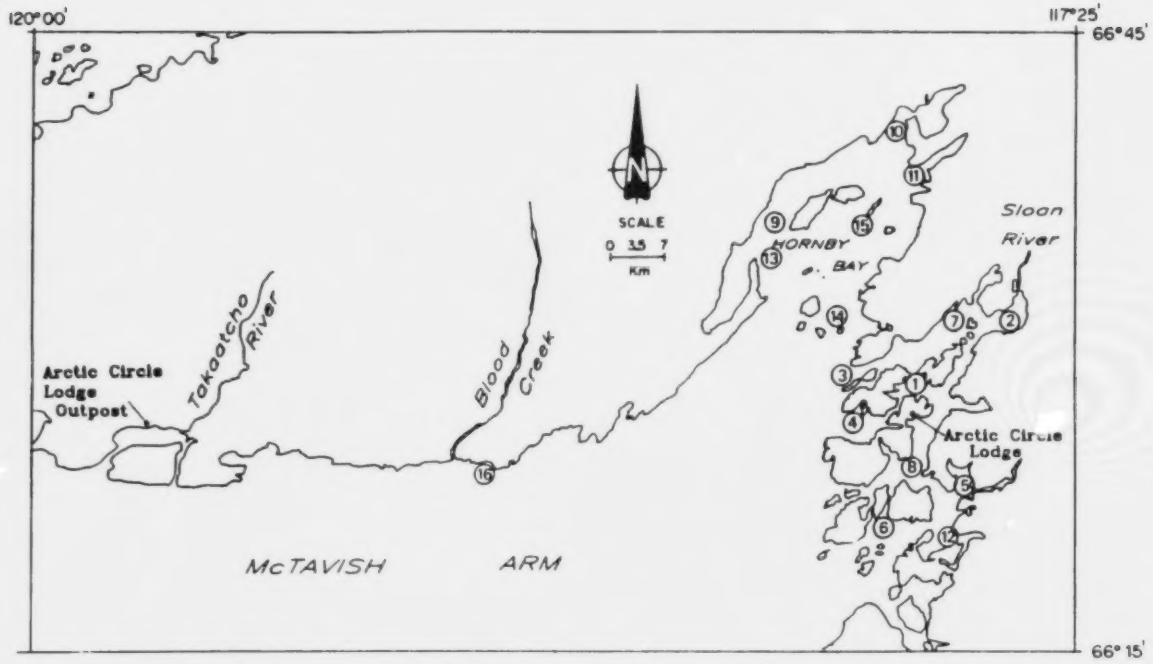


Figure 9. Experimental net locations, McTavish Arm (north), Great Bear Lake, 1984.

Table 10. Catch and catch per unit effort (CPUE) for fish caught by experimental gill nets, McTavish Arm (north), Great Bear Lake, 1984.

		Mesh Size (mm)					Total Catch	CPUE[1]
		38	64	89	114	139		
Lake trout	No.	135	74	73	68	29	379	2.14
	%	35.6	19.5	19.3	17.9	7.7	96.7	
Lake whitefish	No.	5	-	-	-	-	5	0.03
	%	100.0	-	-	-	-	1.3	
Round whitefish	No.	1	-	-	-	-	1	<0.01
	%	100.0	-	-	-	-	0.3	
Cisco sp.	No.	7	-	-	-	-	7	0.04
	%	100.0	-	-	-	-	1.8	
Total	No.	148	74	73	68	29	392	2.22
	%	37.8	18.9	18.6	17.3	7.4		

[1]No. fish/100 m of gillnet/24 h

Table 11. Biological data by length interval for lake trout caught by experimental gill nets, McTavish Arm (north), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
175	1	196	100	-	1.33	0	-	-	-	-	-	-	15	187	84	69	1.35	0
200	2	214	113	53	1.12	0	3	206	75	25	0.84	0	18	210	89	25	0.95	0
225	1	235	100	-	0.77	0	-	-	-	-	-	-	10	235	110	14	0.89	0
250	5	264	200	35	1.08	0	-	-	-	-	-	-	8	264	200	27	1.09	0
275	6	291	250	0	1.02	0	-	-	-	-	-	-	17	289	238	23	0.98	0
300	6	317	325	52	1.02	0	5	311	310	55	1.02	0	15	314	318	51	1.02	0
325	5	335	394	44	1.04	0	2	339	400	0	1.03	0	11	335	396	36	1.04	0
350	5	363	510	42	1.07	0	1	370	500	-	0.99	0	13	363	508	38	1.05	0
375	5	387	600	79	1.03	0	5	384	620	76	1.10	0	17	387	610	74	1.06	0
400	7	416	786	24	1.09	0	3	413	767	58	1.09	0	21	413	780	35	1.09	0
425	9	438	939	74	1.12	0	3	436	867	126	1.04	0	18	438	921	89	1.10	0
450	5	458	1040	119	1.08	0	2	459	1150	141	1.19	50	16	461	1071	125	1.11	6
475	8	492	1406	118	1.18	38	5	489	1290	204	1.10	20	20	490	1362	160	1.15	20
500	6	513	1608	97	1.19	50	4	512	1563	239	1.16	75	20	510	1590	158	1.18	30
525	7	542	1929	170	1.21	100	1	544	2150	-	1.34	100	25	540	1956	176	1.23	32
550	3	562	2133	189	1.20	100	7	560	1943	197	1.10	100	25	562	2000	205	1.13	40
575	9	588	2367	342	1.15	100	6	585	2317	411	1.16	83	27	586	2342	361	1.16	52
600	3	602	2567	153	1.17	100	1	605	2300	-	1.04	100	19	609	2500	183	1.14	21
625	5	637	2833	362	1.10	100	2	637	3625	1025	1.39	100	17	634	3150	719	1.22	41
650	5	659	3700	566	1.27	100	-	-	-	-	-	-	11	660	3700	566	1.27	45
675	4	688	3525	247	1.09	100	2	695	3275	530	0.98	100	10	689	3400	367	1.04	60
700	4	708	3850	-	1.08	100	-	-	-	-	-	-	9	709	3850	-	1.08	44
725	1	740	-	-	-	100	-	-	-	-	-	-	1	740	-	-	-	100
750	2	759	4725	247	1.08	100	-	-	-	-	-	-	3	759	4725	247	1.08	67
775	1	799	5650	-	1.11	100	-	-	-	-	-	-	2	795	5650	-	1.11	50
800	-	-	-	-	-	-	1	812	6100	-	1.14	100	2	806	6100	-	1.14	50
850	-	-	-	-	-	-	-	-	-	-	-	-	2	853	5950	-	0.97	0
875	1	888	8050	-	1.15	100	-	-	-	-	-	-	1	888	8050	-	1.15	100
900	-	-	-	-	-	-	-	-	-	-	-	-	2	920	-	-	-	0
925	-	-	-	-	-	-	-	-	-	-	-	-	1	934	-	-	-	0
950	-	-	-	-	-	-	-	-	-	-	-	-	1	950	-	-	-	0
1000	-	-	-	-	-	-	-	-	-	-	-	-	2	1005	12500	-	1.21	0
TOTAL	116						53						379					
MEAN		483	1414	1327	1.11			474	1470	1156	1.10			476	1337	1545	1.10	

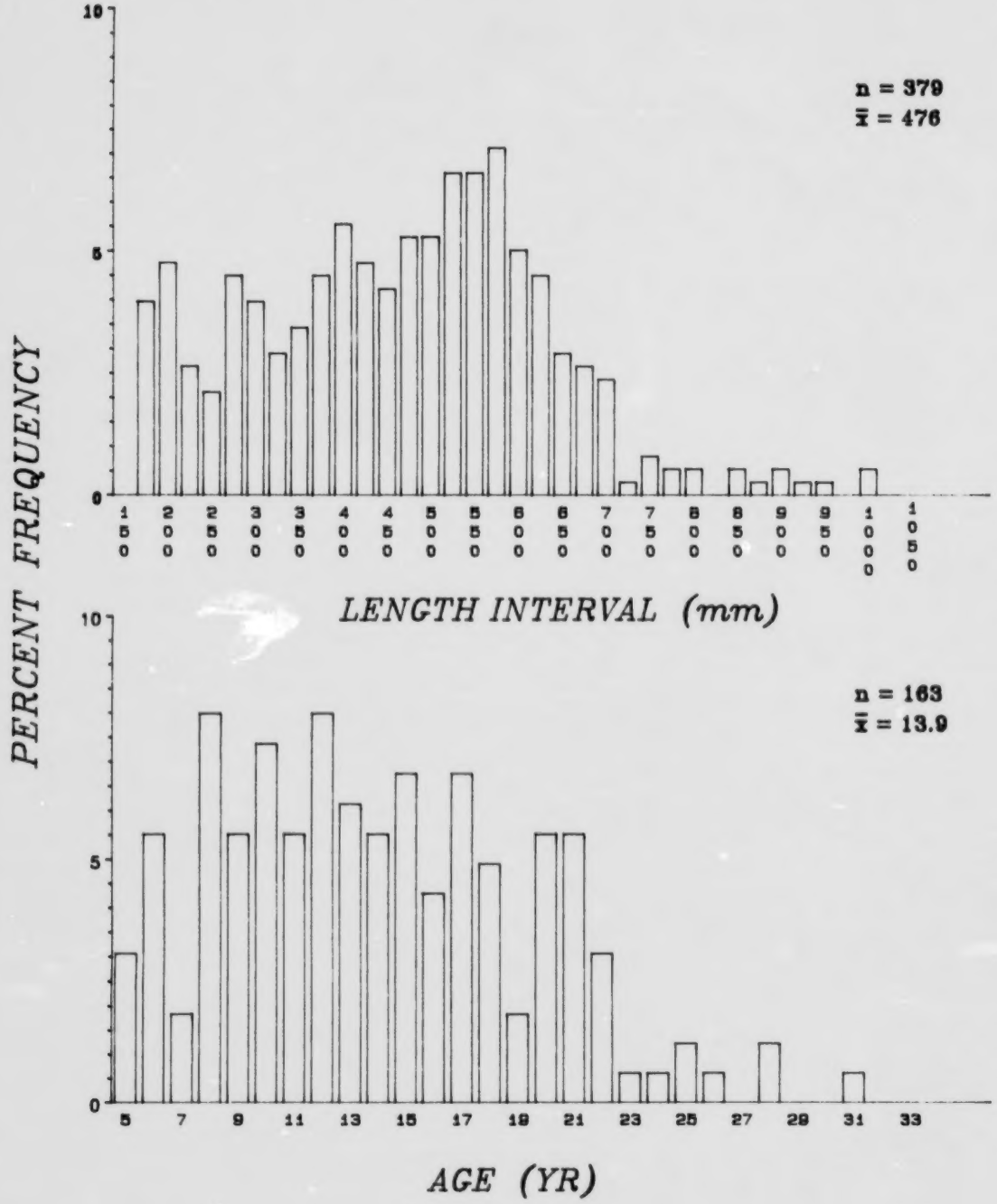


Figure 10. Length and age frequency distributions for lake trout caught by experimental nets, McTavish Arm (north), Great Bear Lake, 1984.

Table 12. Biological data by age group for lake trout caught by experimental gill nets, McTavish Arm (north), Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED						
	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT
5	-	-	-	-	-	-	-	2	203	4	63	18	0.75	0	5	194	9	55	11	0.75	0
6	1	204	-	75	-	0.88	0	1	213	-	100	-	1.03	0	9	203	17	103	61	1.33	0
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	198	18	75	25	0.96	0
8	6	262	39	192	74	1.03	0	1	305	-	250	-	0.88	0	13	253	37	169	70	1.00	0
9	3	270	18	217	29	1.10	0	2	324	13	375	35	1.10	0	9	271	40	222	100	1.05	0
10	9	320	40	356	157	1.02	0	2	346	35	425	106	1.02	0	12	321	39	354	148	1.02	0
11	4	350	28	425	119	0.97	0	4	363	41	488	160	0.98	0	9	343	52	417	173	0.96	0
12	10	389	42	657	218	1.08	0	3	393	14	700	0	1.16	0	13	390	37	667	190	1.10	0
13	8	389	64	681	289	1.09	0	2	465	42	1125	389	1.10	0	10	404	66	770	342	1.09	0
14	4	470	20	1150	178	1.11	0	5	437	30	870	120	1.04	0	9	452	30	994	202	1.07	0
15	7	467	62	1157	437	1.10	29	4	405	94	788	492	1.07	0	11	445	77	1023	471	1.09	18
16	5	489	122	1510	867	1.15	60	2	531	42	1675	318	1.11	100	7	501	103	1557	724	1.14	71
17	5	559	111	2280	1498	1.19	60	6	513	49	1500	297	1.12	50	11	534	82	1855	1052	1.15	55
18	5	494	45	1430	466	1.15	40	3	604	83	2317	553	1.07	100	8	535	80	1763	650	1.12	63
19	1	605	-	2600	-	1.17	100	2	569	9	2000	495	1.08	100	3	581	22	2200	492	1.11	100
20	8	523	63	1738	602	1.17	63	1	590	-	3000	-	1.46	100	9	530	63	1878	703	1.20	67
21	4	573	60	2338	755	1.21	100	5	578	44	2240	502	1.15	100	9	576	48	2283	585	1.17	100
22	3	619	82	2833	922	1.17	100	2	543	26	1950	71	1.23	100	5	589	73	2480	813	1.20	100
23	1	511	-	1500	-	1.12	0	-	-	-	-	-	-	-	1	511	-	1500	-	1.12	0
24	-	-	-	-	-	-	-	1	572	-	2100	-	1.12	100	1	572	-	2100	-	1.12	100
25	1	599	-	2850	-	1.33	100	1	644	-	4350	-	1.63	100	2	622	32	3600	1061	1.48	100
26	1	630	-	2650	-	1.06	100	-	-	-	-	-	-	-	1	630	-	2650	-	1.06	100
28	2	742	81	4675	1379	1.13	100	-	-	-	-	-	-	-	2	742	81	4675	1379	1.13	100
31	-	-	-	-	-	-	-	1	812	-	6100	-	1.14	100	1	812	-	6100	-	1.14	100
TOTAL	88							50							163						
MEAN		442	127	1231	1074	1.10			466	128	1397	1137	1.09			415	145	1110	1095	1.10	
MEAN AGE	14.9							15.5							13.9						

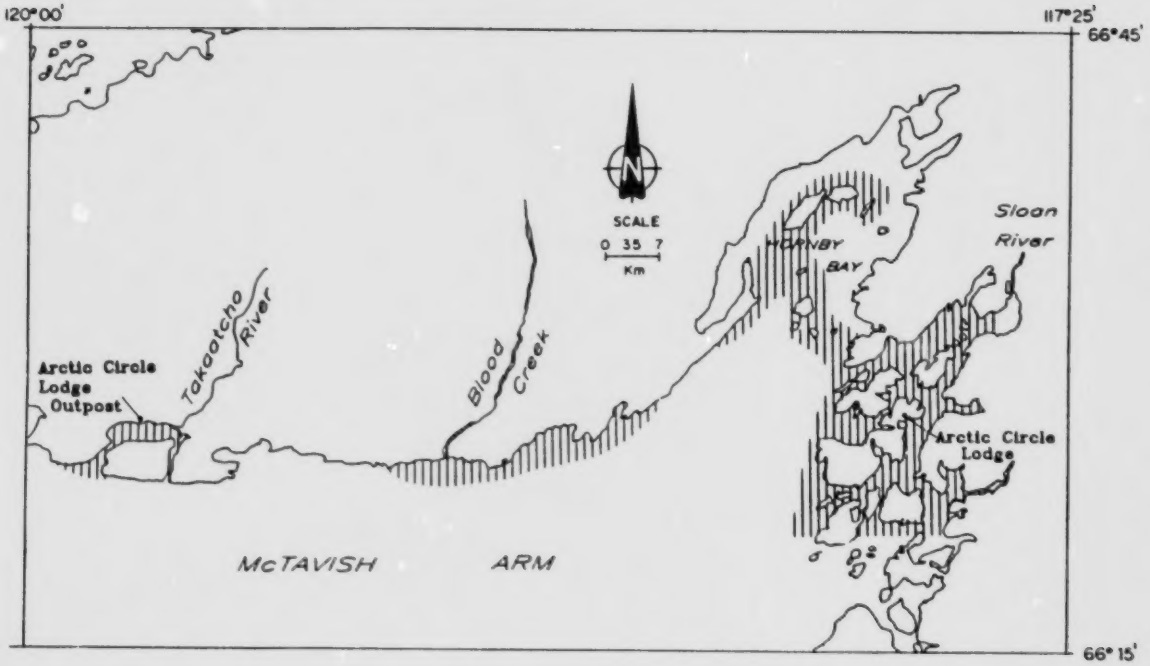


Figure 11. Areas generally fished in McTavish Arm (north), Great Bear Lake, 1984.

Table 13. Biological data by length interval for angled and retained lake trout, McTavish Arm (north), (Arctic Circle Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
325	-	-	-	-	-	-	2	343	450	141	1.12	0	2	343	450	141	1.12	0
350	1	354	450	-	1.01	0	3	366	533	76	1.09	0	4	363	513	75	1.07	0
375	10	386	610	52	1.06	0	7	388	636	69	1.08	0	17	387	621	59	1.07	0
400	9	409	717	97	1.04	0	12	414	775	78	1.09	8	21	412	750	89	1.07	5
425	26	432	862	84	1.07	0	19	436	879	80	1.06	16	47	434	874	85	1.07	6
450	18	460	1042	79	1.07	0	11	461	1064	116	1.09	18	29	460	1050	94	1.08	7
475	9	484	1256	104	1.11	0	14	484	1218	184	1.07	14	23	484	1233	156	1.09	9
500	9	510	1461	162	1.10	11	13	513	1515	565	1.12	54	22	512	1493	440	1.11	36
525	9	533	1650	263	1.09	33	10	532	1780	345	1.18	60	19	532	1718	308	1.14	47
550	16	560	2047	381	1.16	63	16	562	2128	371	1.20	69	32	561	2088	372	1.18	66
575	11	587	2632	368	1.30	91	9	588	2656	545	1.30	89	20	588	2643	443	1.30	90
600	20	613	2813	313	1.22	80	32	610	2820	320	1.24	94	53	611	2809	317	1.23	87
625	24	636	2946	379	1.14	83	30	636	3275	309	1.28	93	55	636	3131	373	1.22	87
650	16	661	3209	397	1.11	88	30	661	3493	390	1.21	97	48	661	3429	441	1.19	90
675	16	684	3616	405	1.13	81	24	685	3808	478	1.18	96	43	685	3799	583	1.18	84
700	12	708	4054	374	1.14	92	11	709	4114	420	1.15	82	24	709	4113	407	1.16	83
725	3	738	4150	492	1.03	100	8	730	3913	439	1.00	88	14	734	4289	747	1.08	71
750	2	761	4575	106	1.04	100	3	757	4300	350	0.99	67	7	758	4529	330	1.04	57
775	3	789	5050	218	1.03	67	-	-	-	-	-	-	9	787	5144	393	1.05	22
800	1	808	5100	-	0.97	100	1	805	5000	-	0.96	100	7	810	5407	289	1.02	29
825	-	-	-	-	-	-	2	836	6300	707	1.08	100	7	831	6164	434	1.07	29
850	-	-	-	-	-	-	-	-	-	-	-	-	7	862	6714	609	1.05	0
875	1	899	5000	-	0.69	100	-	-	-	-	-	-	9	892	7556	1104	1.07	11
900	-	-	-	-	-	-	1	920	8000	-	1.03	100	5	916	8310	315	1.08	20
925	-	-	-	-	-	-	-	-	-	-	-	-	5	931	8930	748	1.11	0
950	-	-	-	-	-	-	-	-	-	-	-	-	5	954	9110	456	1.05	0
1000	-	-	-	-	-	-	-	-	-	-	-	-	7	1004	11137	1946	1.10	0
TOTAL	216						258						541					
MEAN		564	2254	1233	1.12			582	2546	1303	1.17			606	2968	2090	1.14	

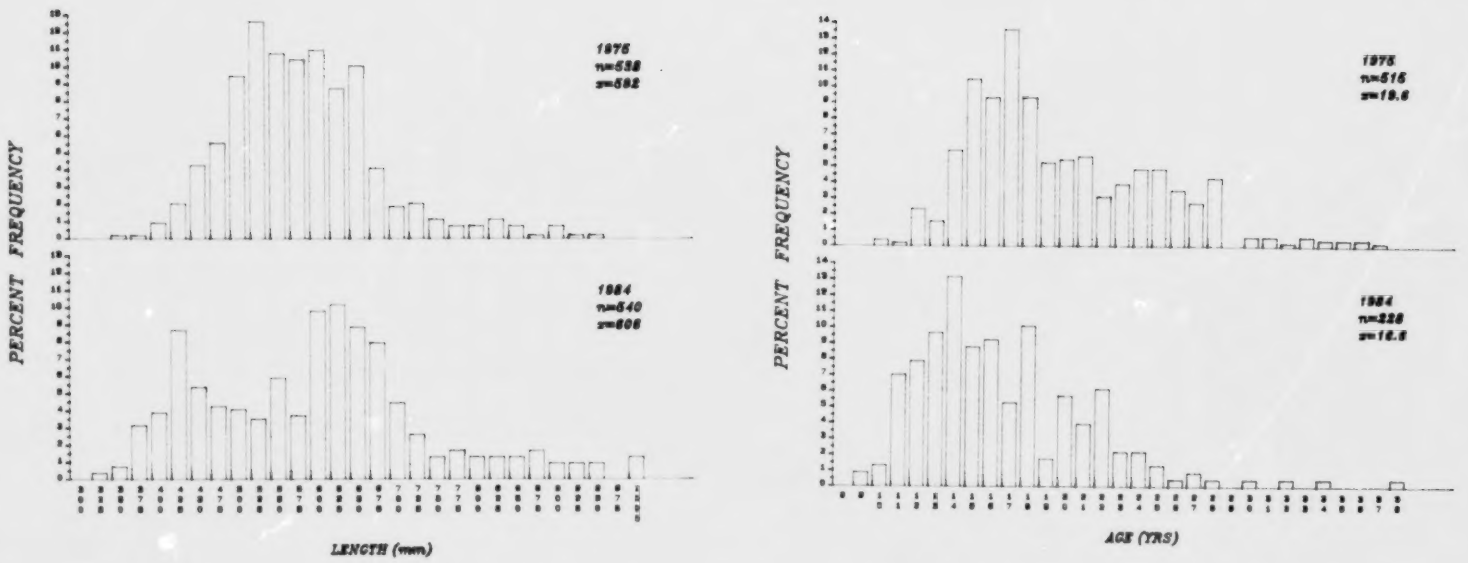


Figure 12. Length and age frequency distributions for angled and retained lake trout, McTavish Arm (north), Great Bear Lake, 1975–1984.

Table 14. Biological data by age group for angled and retained lake trout, McTavish Arm (north), (Arctic Circle Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED						
	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT
9	1	380	-	550	-	1.00	0	1	355	-	450	-	1.01	0	2	368	18	500	71	1.00	0
10	1	400	-	550	-	0.86	0	2	514	8	1225	35	0.90	50	3	476	66	1000	391	0.89	33
11	8	416	62	788	387	1.04	0	8	409	51	731	262	1.03	0	16	412	55	759	321	1.04	0
12	12	446	62	975	526	1.04	8	6	412	43	792	218	1.13	17	18	434	57	914	448	1.07	11
13	9	439	22	894	147	1.05	0	13	428	26	873	148	1.11	23	22	432	25	882	144	1.08	14
14	17	451	56	1003	330	1.07	0	13	464	55	1027	321	1.00	0	30	457	55	1013	320	1.04	0
15	10	497	89	1340	587	1.05	0	10	477	54	1230	408	1.09	40	20	487	72	1285	495	1.07	20
16	9	500	60	1361	556	1.04	0	12	499	71	1404	772	1.05	33	21	500	65	1386	672	1.05	19
17	4	487	50	1225	323	1.05	0	8	484	50	1375	604	1.14	25	12	485	48	1325	515	1.11	17
18	11	548	85	1927	976	1.08	36	12	525	79	1883	926	1.19	58	23	536	81	1904	928	1.14	48
19	2	615	85	2600	849	1.11	0	2	546	34	1875	530	1.13	50	4	581	66	2238	713	1.12	25
20	6	568	89	2450	1165	1.25	67	7	581	91	2271	1090	1.09	57	13	575	86	2354	1081	1.16	62
21	4	525	53	1738	673	1.16	50	5	554	89	2260	1152	1.22	60	9	541	72	2028	953	1.19	56
22	10	572	81	2385	810	1.23	80	4	584	70	2163	682	1.06	100	14	576	75	2321	757	1.18	86
23	3	537	61	1833	625	1.15	67	2	649	6	3425	106	1.25	100	5	582	75	2470	979	1.19	80
24	2	548	25	2150	354	1.30	100	3	581	75	2633	941	1.29	67	5	568	57	2440	738	1.30	80
25	2	530	85	1900	1061	1.20	50	1	635	-	3250	-	1.27	100	3	565	85	2350	1082	1.22	67
26	-	-	-	-	-	-	-	1	653	-	3700	-	1.33	100	1	653	-	3700	-	1.33	100
27	-	-	-	-	-	-	-	2	626	24	3125	389	1.27	100	2	626	24	3125	389	1.27	100
28	1	626	-	2750	-	1.12	100	-	-	-	-	-	-	-	1	626	-	2750	-	1.12	100
30	1	618	-	2800	-	1.19	100	-	-	-	-	-	-	-	1	618	-	2800	-	1.19	100
32	-	-	-	-	-	-	-	1	697	-	4150	-	1.23	100	1	697	-	4150	-	1.23	100
34	-	-	-	-	-	-	-	1	674	-	3600	-	1.18	100	1	674	-	3600	-	1.18	100
38	-	-	-	-	-	-	-	1	713	-	4650	-	1.28	100	1	713	-	4650	-	1.28	100
TOTAL	113							115							228						
MEAN		496	84	1467	835	1.09			501	90	1573	993	1.11			498	87	1521	918	1.10	
MEAN AGE		16.4							16.8							16.6					

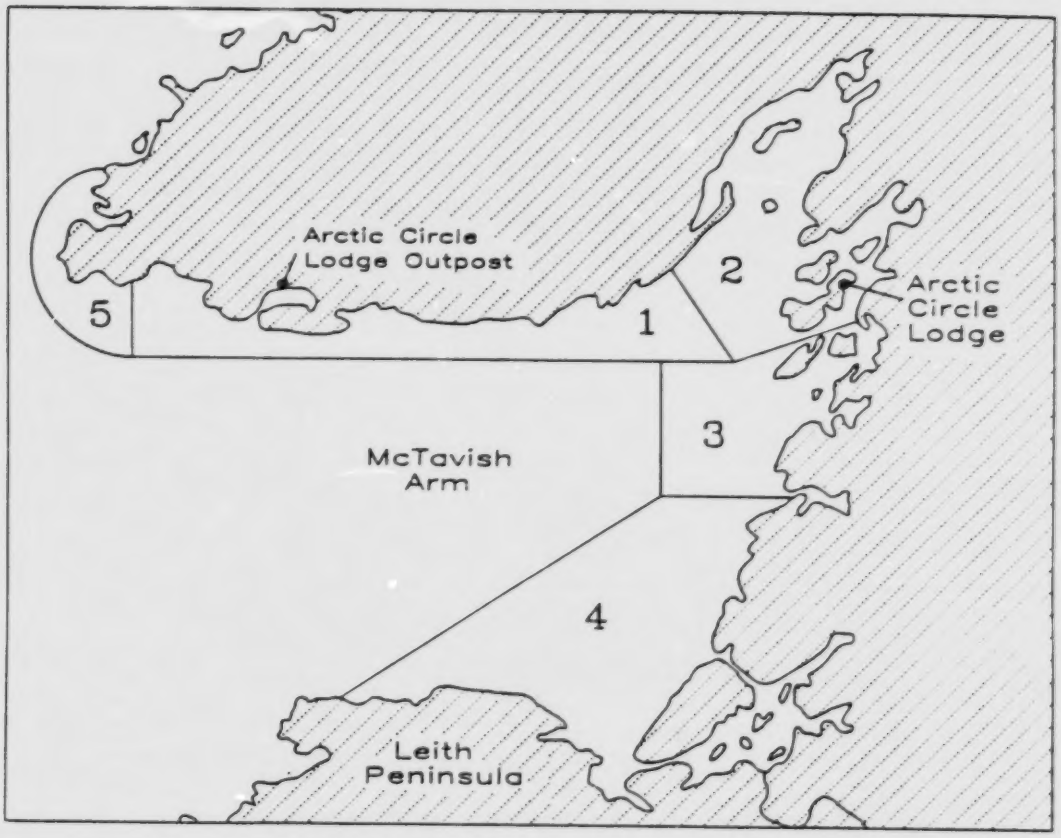


Figure 13. Subarea locations used in the intensive creel census program McTavish Arm (north), Great Bear Lake, 1984.

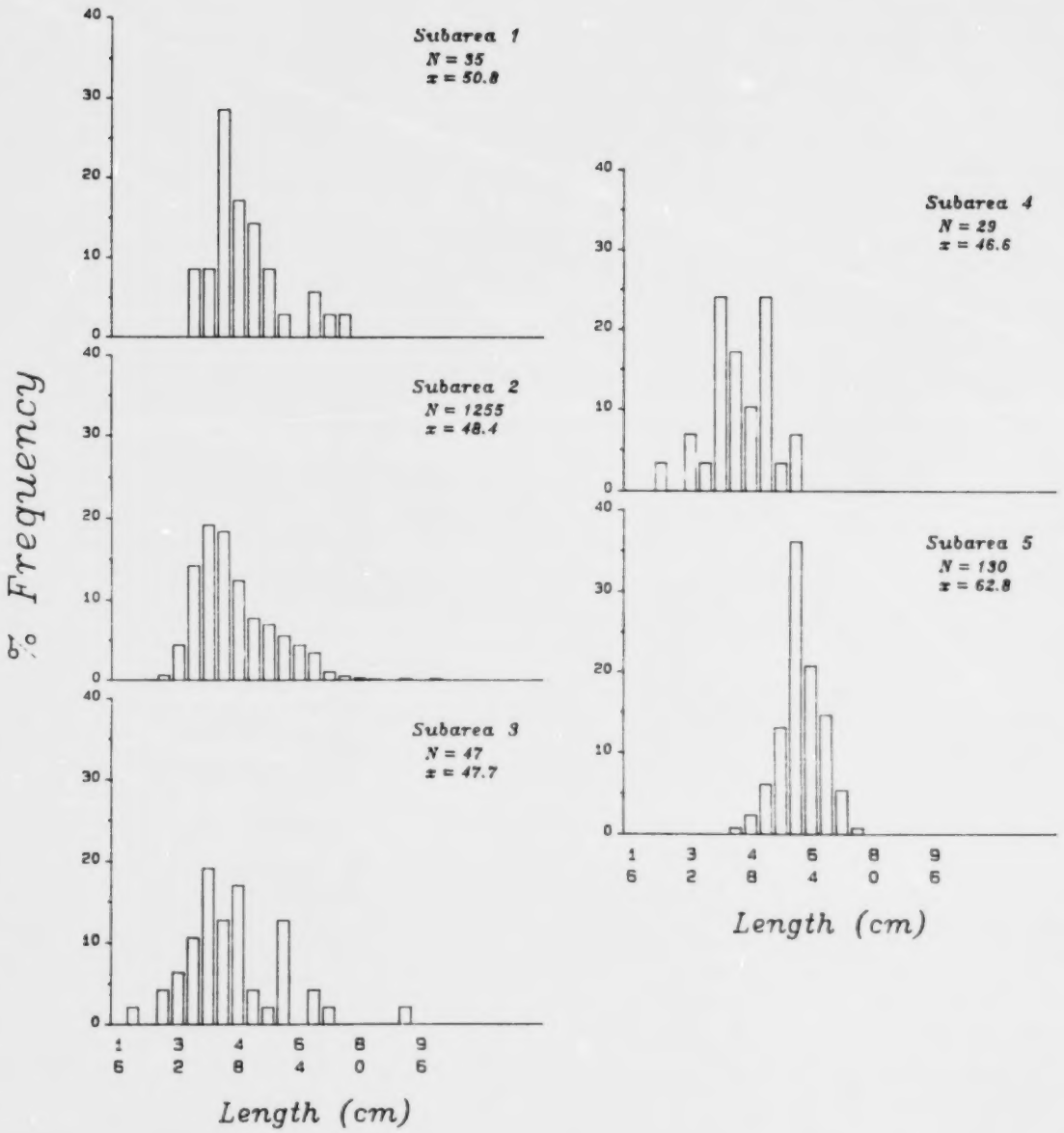


Figure 14. Length frequency distributions by subarea for lake trout caught by angling, McTavish Arm (north), Great Bear Lake, 1984.

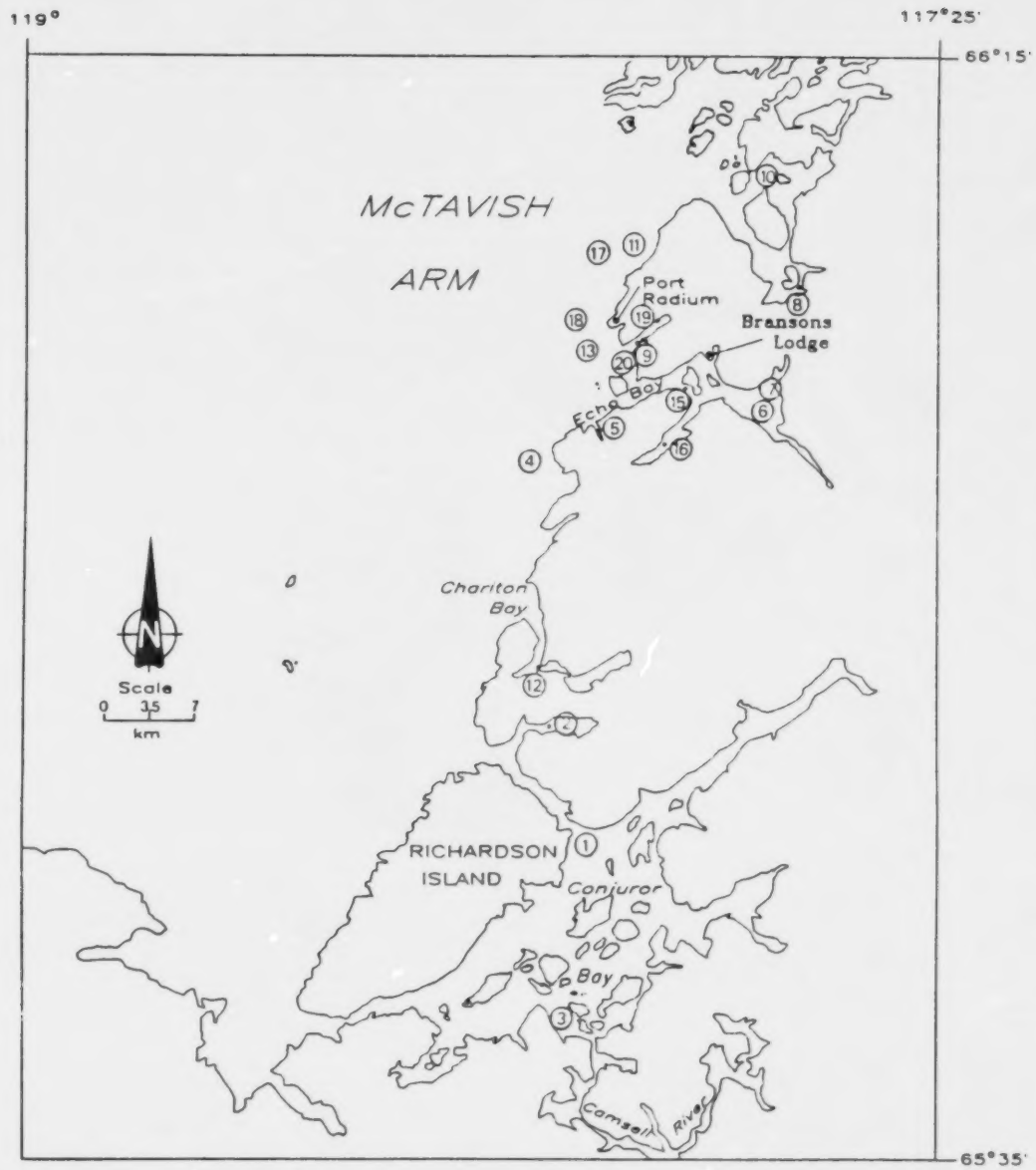


Figure 15. Experimental net locations, McTavish Arm (south), Great Bear Lake, 1984.

Table 15. Catch and catch per unit effort (CPUE) for fish caught by experimental gill nets, McTavish Arm (south), Great Bear Lake, 1984.

		Mesh Size (mm)					Total Catch	CPUE[1]
		38	64	89	114	139		
Lake trout	No.	35	29	26	28	7	125	0.34
	%	28.0	23.2	20.8	22.4	5.6	96.9	
Lake whitefish	No.	2	-	-	-	-	2	<0.01
	%	100.0	-	-	-	-	1.6	
Round whitefish	No.	1	1	-	-	-	2	<0.01
	%	50.0	50.0	-	-	-	1.6	
Total	No.	38	30	26	28	7	129	0.35
	%	29.5	23.3	20.2	21.7	5.4		

[1]No. fish/100 m of gillnet/24 h

Table 16. Biological data by length interval for lake trout caught by experimental gill nets, McTavish Arm (south), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
150	-	-	-	-	-	-	-	-	-	-	-	-						
175	-	-	-	-	-	-	-	-	-	-	-	-	1	156	50	-	1.32	0
225	-	-	-	-	-	-	-	-	-	-	-	-	1	180	50	-	0.86	0
250	-	-	-	-	-	-	-	-	-	-	-	-	2	236	150	0	1.16	0
275	1	295	300	-	1.17	0	2	269	250	0	1.29	0	2	269	250	0	1.29	0
300	1	319	400	-	1.23	0	-	-	-	-	-	-	2	294	300	0	1.18	0
325	7	337	443	79	1.15	0	4	311	338	25	1.12	0	6	315	350	32	1.13	0
350	1	358	600	-	1.31	0	5	336	400	71	1.04	20	12	337	425	75	1.11	8
375	1	390	650	-	1.10	0	3	361	533	58	1.14	0	4	360	550	58	1.18	0
400	7	410	843	181	1.22	0	3	387	617	76	1.06	0	4	388	625	65	1.07	0
425	7	440	914	103	1.08	0	3	411	800	132	1.14	0	10	411	830	162	1.20	0
450	3	464	1183	176	1.18	0	3	430	867	58	1.09	0	10	437	900	91	1.08	0
475	3	479	1217	76	1.11	0	2	460	1100	212	1.13	50	5	462	1150	170	1.16	20
500	5	510	1510	233	1.14	80	2	494	1300	0	1.08	0	5	485	1250	71	1.10	0
525	6	543	1983	223	1.23	83	6	514	1558	256	1.15	83	11	512	1536	235	1.14	82
550	9	560	2128	160	1.21	100	2	527	1500	71	1.03	50	8	539	1863	294	1.18	75
575	6	584	2383	270	1.20	100	3	556	2017	126	1.17	100	12	559	2100	155	1.20	100
600	3	611	2633	126	1.15	67	6	589	2542	434	1.24	100	12	586	2463	354	1.22	100
625	1	627	2650	-	1.08	100	2	621	2600	354	1.09	100	5	615	2620	199	1.13	80
650	1	652	2100	-	0.76	100	2	638	3050	1061	1.17	100	3	634	2917	785	1.14	100
700	-	-	-	-	-	-	1	668	3200	-	1.07	100	2	660	2650	778	0.92	100
775	-	-	-	-	-	-	1	721	3650	-	0.97	100	1	721	3650	-	0.97	100
875	1	876	7200	-	1.07	100	3	790	5650	867	1.14	100	3	790	5650	867	1.14	100
925	2	937	9050	919	1.10	100	-	-	-	-	-	-	1	876	7200	-	1.07	100
950	1	963	11350	-	1.27	100	-	-	-	-	-	-	2	937	9050	919	1.10	100
1000	-	-	-	-	-	-	-	-	-	-	-	-	1	963	11350	-	1.27	100
							1	1010	12050	-	1.17	100	1	1010	12050	-	1.17	100
TOTAL	66						54						126					
MEAN		510	1920	2028	1.16			496	1813	1975	1.13			491	1791	1982	1.15	

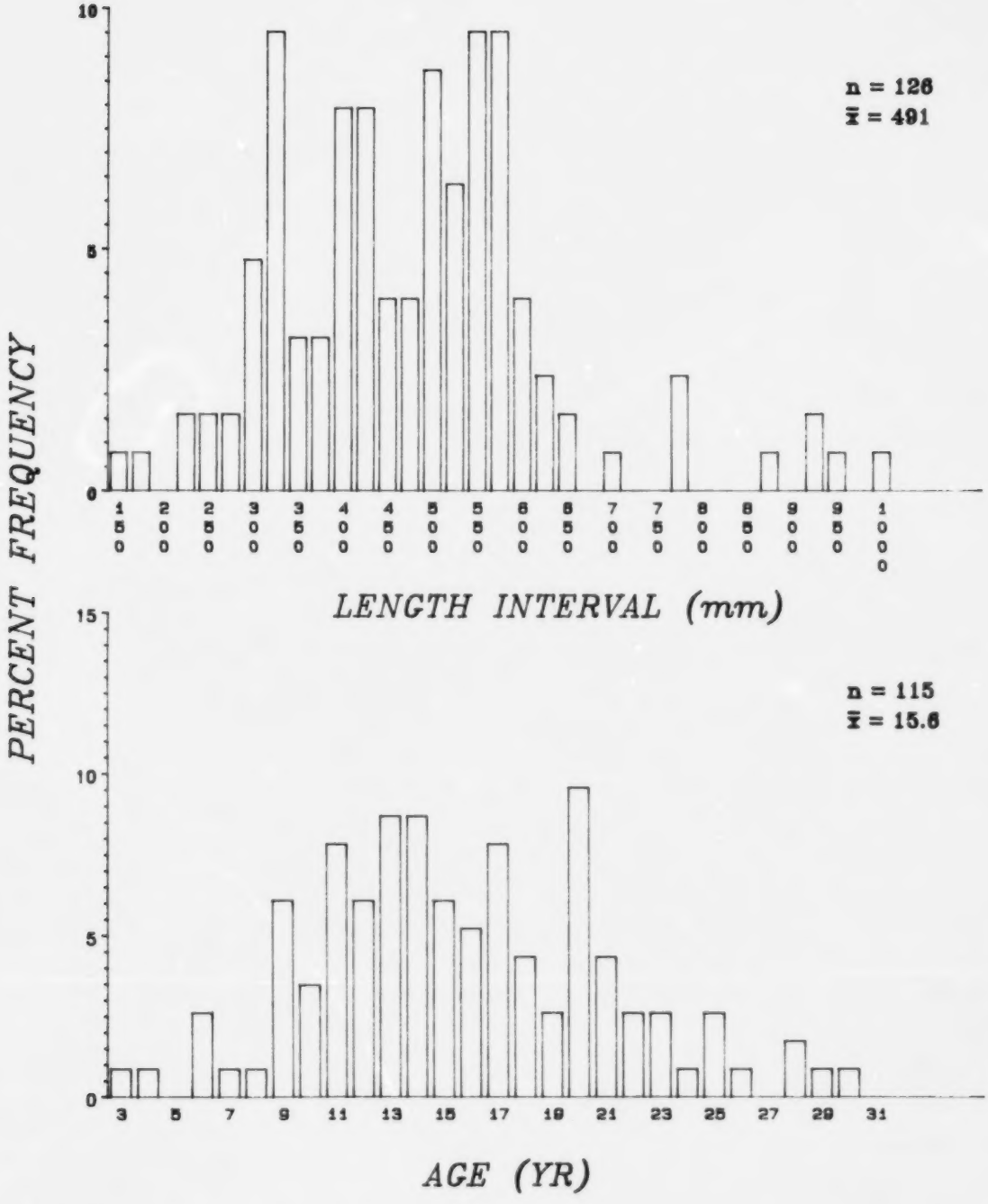


Figure 16. Length and age frequency distributions for lake trout caught by experimental nets, McTavish Arm (south), Great Bear Lake, 1984.

Table 17. Biological data by age group for lake trout caught by experimental gill nets, McTavish Arm (south), Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED						
	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	180	-	50	-	0.86	0
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	156	-	50	-	1.32	0
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	255	34	200	87	1.17	0
7	-	-	-	-	-	-	-	1	347	-	450	-	1.08	0	1	347	-	450	-	1.08	0
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	324	-	350	-	1.03	0
9	3	347	71	483	236	1.12	0	4	299	35	300	58	1.14	0	7	319	54	379	173	1.13	0
10	3	358	32	517	189	1.09	0	1	323	-	350	-	1.04	0	4	349	31	475	176	1.08	0
11	3	363	49	533	153	1.12	0	6	355	86	550	446	1.09	0	9	358	72	544	361	1.10	0
12	5	420	21	850	127	1.15	0	2	405	39	725	247	1.07	0	7	415	25	814	157	1.13	0
13	6	387	75	692	380	1.13	0	4	385	39	675	171	1.18	25	10	386	60	685	300	1.15	10
14	5	461	49	1150	418	1.14	20	5	487	129	1310	933	0.99	40	10	474	93	1230	687	1.07	30
15	3	502	73	1367	473	1.06	33	4	459	62	1263	626	1.21	50	7	478	65	1307	523	1.15	43
16	5	555	56	2020	469	1.17	80	1	492	-	1300	-	1.09	0	6	545	56	1900	512	1.16	67
17	2	492	107	1600	1061	1.23	50	7	513	57	1514	485	1.09	43	9	508	63	1533	564	1.13	44
18	2	465	64	1425	318	1.43	50	3	536	38	1650	557	1.04	100	5	507	57	1560	442	1.20	80
19	2	513	42	1575	530	1.14	0	1	552	-	1900	-	1.13	100	3	526	38	1683	419	1.14	33
20	8	556	35	2194	381	1.27	88	3	609	134	2900	1431	1.22	100	11	570	71	2386	787	1.25	91
21	3	555	42	2250	427	1.31	100	2	634	49	2950	354	1.16	100	5	586	58	2530	519	1.25	100
22	2	576	46	2175	460	1.13	50	1	590	-	2900	-	1.41	100	3	580	34	2417	530	1.23	67
23	1	616	-	2750	-	1.18	100	2	609	16	2775	106	1.23	100	3	611	12	2767	76	1.21	100
24	-	-	-	-	-	-	-	1	517	-	1650	-	1.19	100	1	517	-	1650	-	1.19	100
25	3	571	73	1850	433	1.01	100	-	-	-	-	-	-	-	3	571	73	1850	433	1.01	100
26	1	504	-	1300	-	1.02	100	-	-	-	-	-	-	-	1	504	-	1300	-	1.02	100
28	-	-	-	-	-	-	-	2	789	11	5550	1202	1.13	100	2	789	11	5550	1202	1.13	100
29	1	876	-	7200	-	1.07	100	-	-	-	-	-	-	-	1	876	-	7200	-	1.07	100
30	1	935	-	9700	-	1.19	100	-	-	-	-	-	-	-	1	935	-	9700	-	1.19	100
TOTAL	59							50							115						
MEAN		492	121	1649	1499	1.16			477	132	1512	1276	1.12			472	135	1513	1395	1.14	
MEAN AGE	16.6							15.7							15.6						

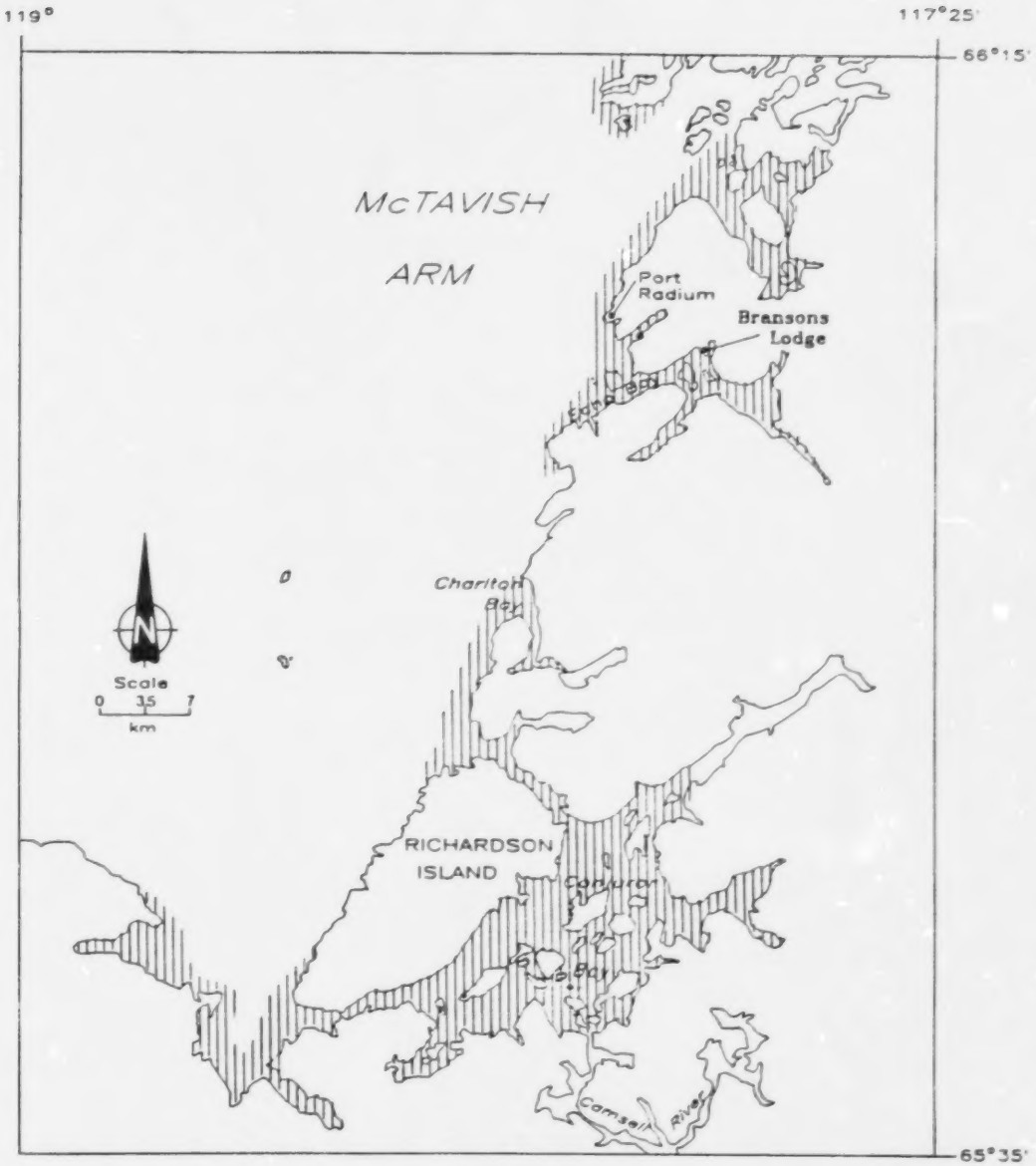


Figure 17. Areas generally fished in McTavish (south), Great Bear Lake, 1984.

Table 18. Biological data by length interval for angled and retained lake trout, McTavish Arm (south), (Bransons Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
325	-	-	-	-	-	-	-	-	-	-	-	-						
350	1	365	550	-	1.13	0	-	-	-	-	-	-	1	33:	450	-	1.24	0
375	-	-	-	-	-	-	-	-	-	-	-	-	1	365	550	-	1.13	0
400	-	-	-	-	-	-	2	393	600	71	0.99	0	3	387	583	58	1.01	0
450	5	464	1310	175	1.31	60	3	415	767	104	1.07	0	3	415	767	104	1.07	0
475	4	488	1325	301	1.13	25	1	465	1100	-	1.09	0	6	465	1275	178	1.27	50
500	2	509	1550	283	1.17	0	7	485	1200	265	1.05	0	11	486	1245	271	1.08	9
525	5	542	1650	369	1.04	40	1	520	1600	-	1.14	0	3	512	1567	202	1.16	0
550	2	556	2225	35	1.30	50	1	536	2100	-	1.36	100	6	541	1725	378	1.10	50
575	14	589	2636	225	1.29	71	4	566	2263	229	1.25	75	6	563	2250	179	1.26	67
600	8	616	3038	253	1.30	88	11	589	2755	369	1.35	100	25	589	2688	296	1.32	84
625	24	637	3202	359	1.24	92	13	611	2923	305	1.28	100	22	613	2970	279	1.29	95
650	15	661	3577	301	1.24	100	16	635	3391	309	1.33	100	40	636	3278	348	1.28	95
675	10	687	4075	486	1.26	100	19	661	3596	560	1.25	100	34	661	3588	458	1.24	100
700	8	711	4056	399	1.13	88	13	686	3965	420	1.23	100	23	686	4013	442	1.24	100
725	4	732	4625	266	1.18	75	12	712	4488	500	1.24	100	21	711	4288	503	1.19	95
750	2	751	4600	636	1.09	50	8	733	4163	647	1.05	100	12	733	4317	581	1.09	92
775	1	791	5200	-	1.05	0	3	761	5083	701	1.15	100	5	757	4890	646	1.13	80
800	3	809	6517	1332	1.23	67	4	786	5713	572	1.18	100	6	788	5792	661	1.18	67
825	1	829	6450	-	1.13	100	2	807	5575	530	1.06	100	5	808	6140	1106	1.16	80
850	1	855	6200	-	0.99	100	2	828	6950	849	1.23	100	5	835	7040	609	1.21	60
875	-	-	-	-	-	-	-	-	-	-	-	-	3	852	7217	1468	1.17	33
900	1	909	6600	-	0.88	0	1	910	7950	-	1.05	100	3	888	8167	225	1.17	0
925	1	945	8950	-	1.06	100	-	-	-	-	-	-	5	913	8960	1717	1.17	20
950	-	-	-	-	-	-	-	-	-	-	-	-	2	944	9375	601	1.11	50
975	-	-	-	-	-	-	-	-	-	-	-	-	1	956	10500	-	1.20	0
1000	-	-	-	-	-	-	-	-	-	-	-	-	2	984	10675	1025	1.12	0
1025	-	-	-	-	-	-	-	-	-	-	-	-	4	1007	12250	870	1.20	0
1075	1	1085	13000	-	1.02	100	-	-	-	-	-	-	1	1030	13000	-	1.19	0
													1	1085	13000	-	1.02	100
TOTAL	113						123						260					
MEAN		643	3423	1626	1.22			645	3467	1351	1.22			663	3909	2293	1.22	

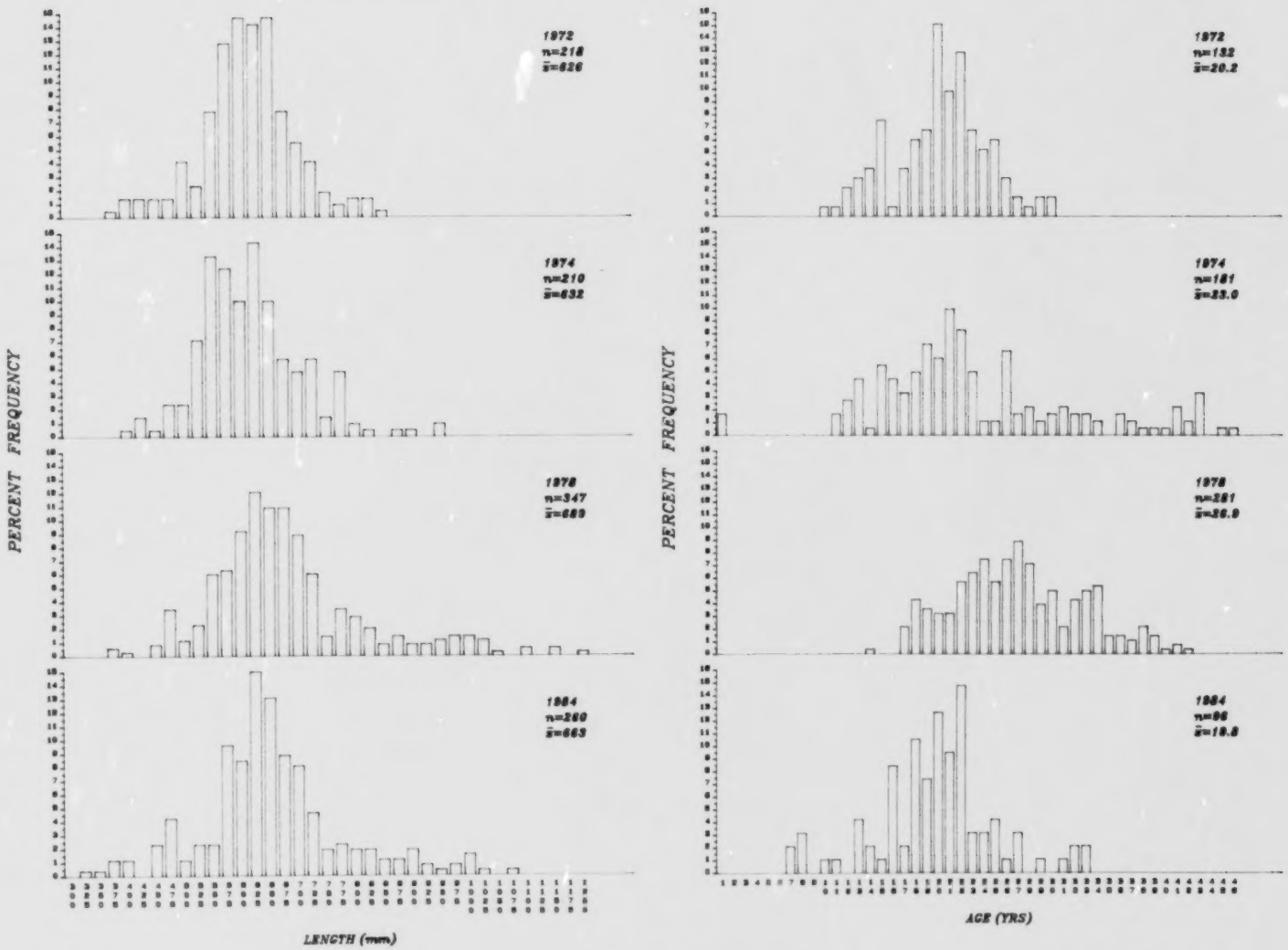


Figure 18. Length and age frequency distributions for angled and retained lake trout, McTavish Arm (south), Great Bear Lake, 1972–1984.

Table 19. Biological data by age group for angled and retained lake trout, McTavish Arm (south), (Bransons Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED						
	LENGTH(MM)			WEIGHT(G)			%	LENGTH(MM)			WEIGHT(G)			%	LENGTH(MM)			WEIGHT(G)			%
	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
7	1	487	-	1150	-	1.00	100	1	465	-	1100	-	1.09	0	2	476	16	1125	35	1.04	50
8	1	461	-	1100	-	1.12	100	2	435	64	925	530	1.05	0	3	444	47	983	388	1.08	33
10	-	-	-	-	-	-	-	1	487	-	650	-	0.56	0	1	487	-	650	-	0.56	0
11	1	549	-	1050	-	0.63	0	-	-	-	-	-	-	-	1	549	-	1050	-	0.63	0
13	2	553	52	2325	813	1.34	50	2	678	18	2775	884	0.88	100	4	616	79	2550	740	1.11	75
14	1	476	-	1000	-	0.93	0	1	423	-	850	-	1.12	0	2	450	37	925	106	1.03	0
15	1	365	-	550	-	1.13	0	-	-	-	-	-	-	-	1	365	-	550	-	1.13	0
16	4	542	92	1800	585	1.14	25	4	511	116	1813	1613	1.12	25	8	527	98	1806	1123	1.13	25
17	1	494	-	1650	-	1.37	0	1	707	-	3400	-	0.96	100	2	601	151	2525	1237	1.17	50
18	4	627	107	3038	1110	1.20	50	6	606	84	2642	995	1.14	67	10	614	88	2800	1001	1.17	60
19	5	628	29	3230	617	1.29	80	2	542	69	2025	813	1.23	50	7	603	56	2886	842	1.28	71
20	9	610	74	2800	1058	1.18	67	3	606	35	2717	454	1.21	100	12	609	65	2779	924	1.19	75
21	1	637	-	3150	-	1.22	100	8	616	97	3075	1149	1.23	88	9	618	91	3083	1075	1.23	89
22	7	607	65	2821	932	1.23	100	7	642	66	3000	558	1.15	100	14	624	65	2911	744	1.19	100
23	3	711	70	4500	964	1.26	67	-	-	-	-	-	-	-	3	711	70	4500	964	1.26	67
24	1	655	-	3600	-	1.28	100	2	701	97	4750	1485	1.37	100	3	685	73	4367	1242	1.34	100
25	3	687	28	3900	527	1.20	100	1	595	-	3700	-	1.76	100	4	664	51	3850	442	1.34	100
26	-	-	-	-	-	-	-	1	808	-	5200	-	0.99	100	1	808	-	5200	-	0.99	100
27	1	559	-	2200	-	1.26	100	2	709	37	4525	672	1.27	100	3	659	90	3750	1424	1.27	100
29	-	-	-	-	-	-	-	1	651	-	4150	-	1.50	100	1	651	-	4150	-	1.50	100
31	-	-	-	-	-	-	-	1	601	-	2950	-	1.36	100	1	601	-	2950	-	1.36	100
32	1	690	-	3750	-	1.14	100	1	764	-	5050	-	1.13	100	2	727	52	4400	919	1.14	100
33	1	945	-	8950	-	1.06	100	1	690	-	3800	-	1.16	100	2	818	180	6375	3642	1.11	100
TOTAL	48							48							96						
MEAN		608	101	2884	1453	1.19			609	103	2869	1315	1.17			608	102	2877	1379	1.18	
MEAN AGE	19.7							20.0							19.8						

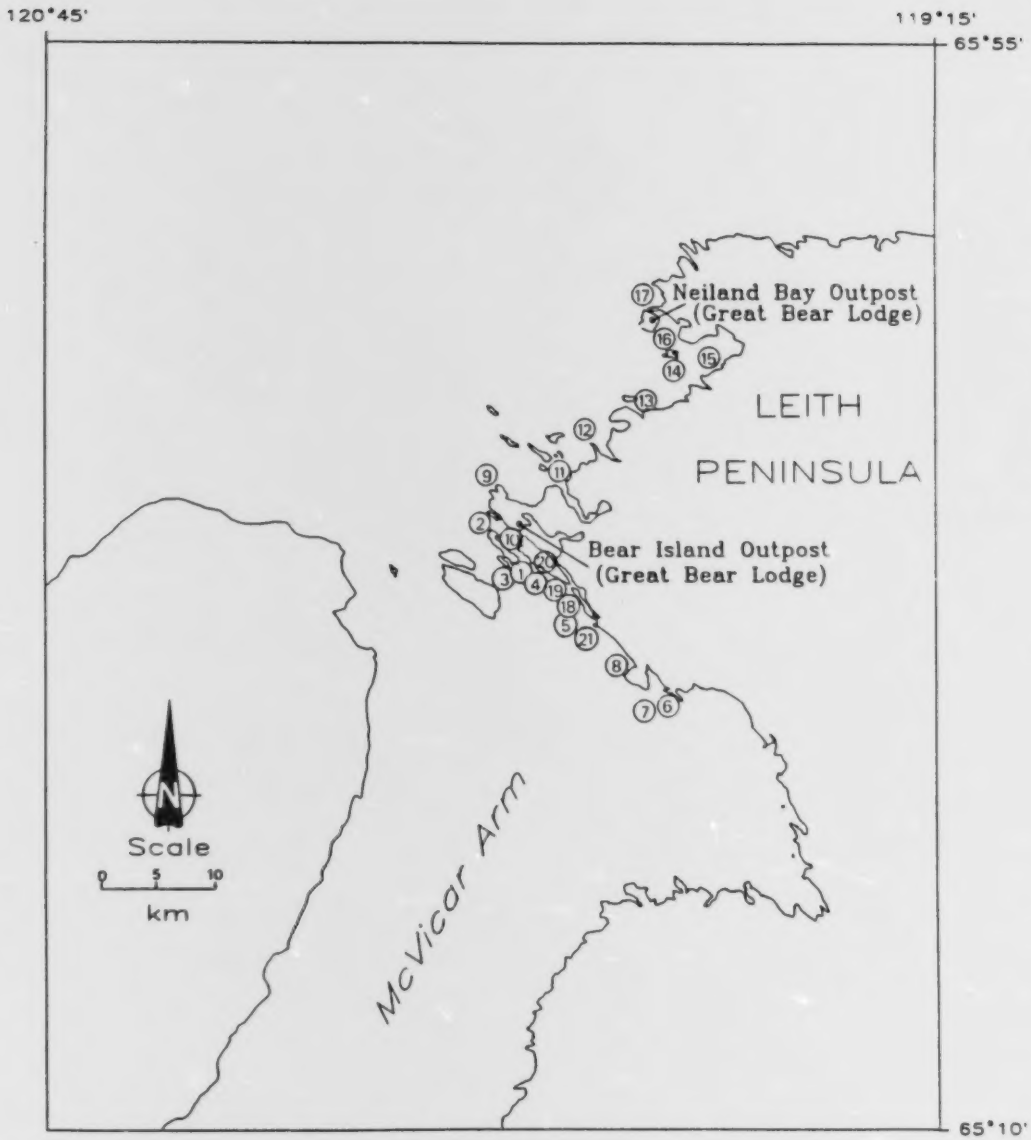


Figure 19. Experimental net locations, McVicar Arm (north), Great Bear Lake, 1984.

Table 20. Catch and catch per unit effort (CPUE) for fish caught by experimental gill nets, McVicar Arm (north), Great Bear Lake, 1984.

		Mesh Size (mm)					Total Catch	CPUE[1]
		38	64	89	114	139		
Lake trout	No.	34	39	28	34	13	148	0.26
	%	23.0	26.4	18.9	23.0	8.8	56.7	
Lake whitefish	No.	3	5	3	12	13	36	0.06
	%	8.3	13.9	8.3	33.3	36.1	13.8	
Round whitefish	No.	2	10	-	-	-	12	0.02
	%	16.7	83.3	-	-	-	4.6	
Northern pike	No.	1	-	1	-	-	2	<0.01
	%	50.0	-	50.0	-	-	0.8	
Arctic grayling	No.	-	-	-	-	1	1	<0.01
	%	-	-	-	-	100.0	0.4	
Lake cisco	No.	20	39	2	1	-	62	0.11
	%	32.3	62.9	3.2	1.6	-	23.8	
Total	No.	60	93	34	47	27	261	0.46
	%	23.0	35.6	13.0	18.0	10.3		

[1]No. fish/100 m of gillnet/24 h

Table 21. Biological data by length interval for lake trout caught by experimental gill nets, McVicar Arm (north), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
175	-	-	-	-	-	-	-	-	-	-	-	-	1	175	50	-	0.93	0
400	3	406	717	76	1.07	0	2	419	875	35	1.19	0	6	409	767	98	1.11	0
450	-	-	-	-	-	-	1	457	1200	-	1.26	0	1	457	1200	-	1.26	0
500	2	507	1450	212	1.11	50	-	-	-	-	-	-	2	507	1450	212	1.11	50
525	1	531	2100	-	1.40	100	-	-	-	-	-	-	1	531	2100	-	1.40	100
550	1	574	2500	-	1.32	100	5	565	2210	227	1.23	80	6	566	2258	235	1.24	83
575	4	590	2375	338	1.15	75	3	590	2733	454	1.33	100	7	590	2529	403	1.23	86
600	6	609	2858	287	1.27	100	8	613	2888	279	1.25	100	15	612	2875	272	1.26	93
625	8	634	2994	310	1.18	100	7	636	3300	421	1.28	100	17	636	3137	386	1.22	88
650	6	660	3533	859	1.23	100	6	660	3225	401	1.12	83	14	661	3379	659	1.18	79
675	5	689	3370	346	1.03	100	7	686	3893	289	1.21	100	17	688	3675	402	1.13	71
700	2	721	4100	707	1.10	100	2	713	4875	1167	1.35	100	7	716	4488	906	1.22	57
725	2	733	4175	106	1.06	100	6	736	4708	558	1.18	100	10	735	4575	534	1.15	80
750	3	763	4783	252	1.08	100	5	758	4920	488	1.13	100	9	760	4869	399	1.11	89
775	6	790	5933	1193	1.20	100	4	791	5413	342	1.09	100	10	790	5725	950	1.16	100
800	-	-	-	-	-	-	2	811	5125	35	0.96	100	2	811	5125	35	0.96	100
825	3	832	6800	132	1.18	100	1	825	6050	-	1.08	100	4	831	6613	390	1.15	100
850	5	859	6920	472	1.09	100	2	858	7525	35	1.19	100	7	858	7093	486	1.12	100
875	2	888	7600	778	1.08	100	2	883	6150	566	0.90	100	4	885	6875	1005	0.99	100
900	1	920	9150	-	1.18	100	2	923	7875	742	1.00	100	4	920	8300	904	1.06	75
925	-	-	-	-	-	-	3	941	8717	176	1.05	100	3	941	8717	176	1.05	100
975	-	-	-	-	-	-	1	984	10550	-	1.11	100	1	984	10550	-	1.11	100
TOTAL	60						69						148					
MEAN		687	4069	2011	1.16			701	4280	1977	1.18			690	4124	2028	1.16	

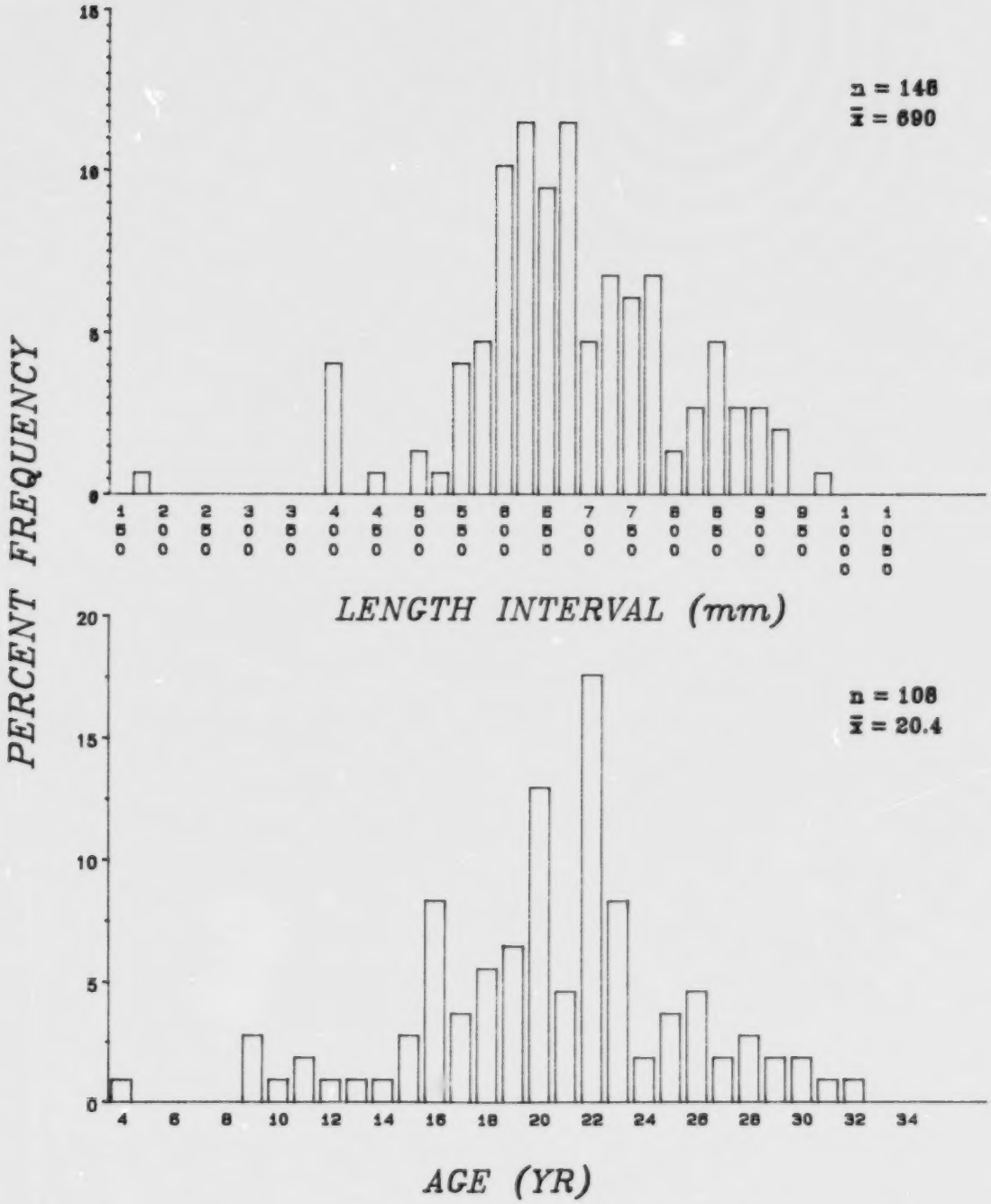


Figure 20. Length and age frequency distributions for lake trout caught by experimental nets, McVicar Arm (north), Great Bear Lake, 1984.

Table 22. Biological data by age group for lake trout caught by experimental gill nets, McVicar Arm (north), Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED						
	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	175	-	50	-	0.93	0
9	1	400	-	650	-	1.02	0	1	457	-	1200	-	1.26	0	3	420	32	850	304	1.12	0
10	1	401	-	700	-	1.09	0	-	-	-	-	-	-	-	1	401	-	700	-	1.09	0
11	1	416	-	800	-	1.11	0	1	416	-	850	-	1.18	0	2	416	0	825	35	1.15	0
12	-	-	-	-	-	-	-	1	421	-	900	-	1.21	0	1	421	-	900	-	1.21	0
13	1	502	-	1300	-	1.03	0	-	-	-	-	-	-	-	1	502	-	1300	-	1.03	0
14	-	-	-	-	-	-	-	1	555	-	1950	-	1.14	100	1	555	-	1950	-	1.14	100
15	1	580	-	1950	-	1.00	0	2	612	56	2775	672	1.20	50	3	601	43	2500	673	1.14	33
16	7	631	67	2821	724	1.11	100	2	614	57	2300	283	1.00	50	9	627	62	2706	676	1.09	89
17	3	617	19	2833	76	1.21	100	1	635	-	3050	-	1.19	100	4	622	18	2888	125	1.20	100
18	3	658	63	3367	797	1.17	100	3	683	158	4483	2740	1.31	100	6	671	108	3925	1905	1.24	100
19	4	721	90	4963	1499	1.32	100	3	661	81	3350	700	1.17	100	7	695	85	4271	1425	1.26	100
20	7	757	113	5136	2181	1.12	100	7	703	97	4050	1370	1.14	100	14	730	105	4593	1838	1.13	100
21	1	628	-	2850	-	1.15	100	4	663	65	3388	912	1.15	100	5	656	58	3280	826	1.15	100
22	9	682	70	3628	1161	1.12	100	10	679	65	3700	888	1.17	100	19	680	66	3666	997	1.15	100
23	4	686	137	4213	2052	1.26	100	5	710	122	4610	2171	1.24	100	9	699	121	4433	1995	1.25	100
24	-	-	-	-	-	-	-	2	840	141	6900	2828	1.14	100	2	840	141	6900	2828	1.14	100
25	2	656	89	3450	1626	1.17	100	2	860	90	6325	1450	0.99	100	4	758	138	4888	2083	1.08	100
26	-	-	-	-	-	-	-	5	706	76	4500	1295	1.27	100	5	706	76	4500	1295	1.27	100
27	-	-	-	-	-	-	-	2	915	36	7225	2086	0.93	100	2	915	36	7225	2086	0.93	100
28	-	-	-	-	-	-	-	3	795	135	6167	2130	1.23	100	3	795	135	6167	2130	1.23	100
29	1	767	-	4750	-	1.05	100	1	775	-	5100	-	1.10	100	2	771	6	4925	247	1.07	100
30	1	854	-	7000	-	1.12	100	1	984	-	10550	-	1.11	100	2	919	92	8775	2510	1.12	100
31	-	-	-	-	-	-	-	1	602	-	3200	-	1.47	100	1	602	-	3200	-	1.47	100
32	1	877	-	7050	-	1.05	100	-	-	-	-	-	-	-	1	877	-	7050	-	1.05	100
TOTAL	48							58							108						
MEAN		668	118	3700	1818	1.15			696	127	4212	2051	1.17			676	134	3913	1999	1.16	
MEAN AGE	19.6							21.6							20.4						

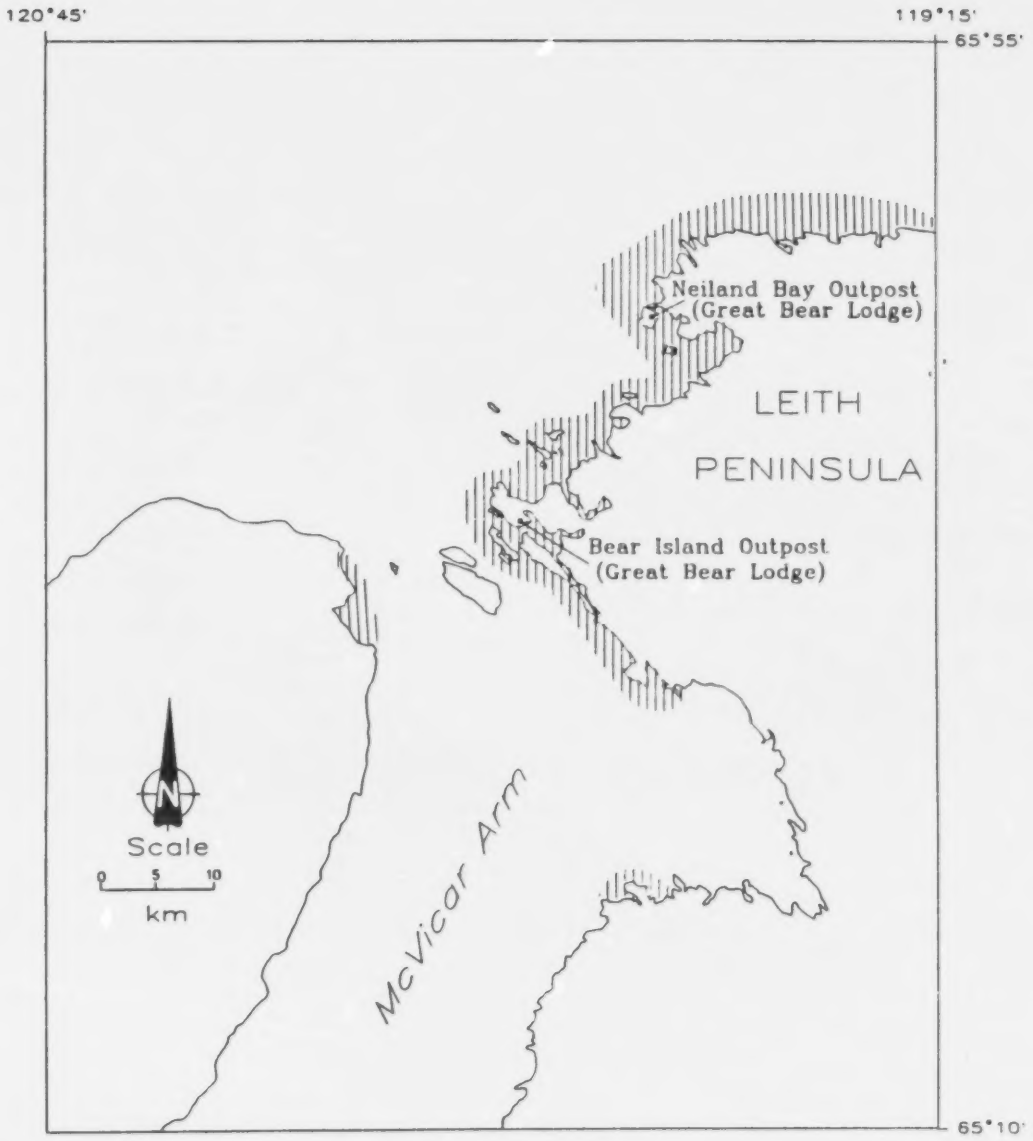


Figure 21. Areas generally fished in Mcvicar Arm (north), Great Bear Lake, 1984.

Table 23. Biological data by length interval for angled and retained lake trout, McVicar Arm (north), (Great Bear Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
575	-	-	-	-	-	-	2	595	3100	636	1.47	50	2	595	3100	636	1.47	50
600	2	608	3125	247	1.39	100	3	608	2917	729	1.30	33	6	609	2900	543	1.29	50
625	4	633	3294	761	1.30	100	-	-	-	-	-	-	4	633	3294	761	1.30	100
650	1	668	3950	-	1.33	100	-	-	-	-	-	-	1	668	3950	-	1.33	100
675	4	683	3700	439	1.16	100	2	688	4800	990	1.47	100	6	685	4067	797	1.27	100
700	3	711	4075	390	1.14	100	1	710	3300	-	0.92	100	4	711	3881	501	1.08	100
725	1	735	5000	-	1.26	100	-	-	-	-	-	-	1	735	5000	-	1.26	100
750	2	764	4875	460	1.09	100	1	752	5200	-	1.22	100	3	760	4983	375	1.14	100
775	1	794	5600	-	1.12	100	-	-	-	-	-	-	1	794	5600	-	1.12	100
800	-	-	-	-	-	-	1	820	7250	-	1.31	100	1	820	7250	-	1.31	100
825	1	840	7000	-	1.18	100	-	-	-	-	-	-	1	840	7000	-	1.18	100
850	1	872	8000	-	1.21	100	3	856	7700	700	1.23	100	4	860	7775	591	1.22	100
875	2	887	8188	725	1.17	100	3	886	8795	380	1.26	100	5	887	8552	561	1.23	100
900	1	924	9725	-	1.23	100	3	904	8558	600	1.16	100	4	909	8850	762	1.18	100
925	1	941	8525	-	1.02	100	2	936	9125	1591	1.11	100	3	937	8925	1177	1.08	100
950	2	958	10175	955	1.16	100	2	958	11750	354	1.34	100	4	958	10963	1083	1.25	100
1025	1	1040	11400	-	1.01	100	1	1030	12100	-	1.11	100	2	1035	11750	495	1.06	100
TOTAL	27						24						52 [a]					
MEAN		765	5634	2671	1.19			809	7055	3041	1.26			782	6228	2933	1.22	

a) Bear Island Outpost and Neiland Bay Outpost combined.

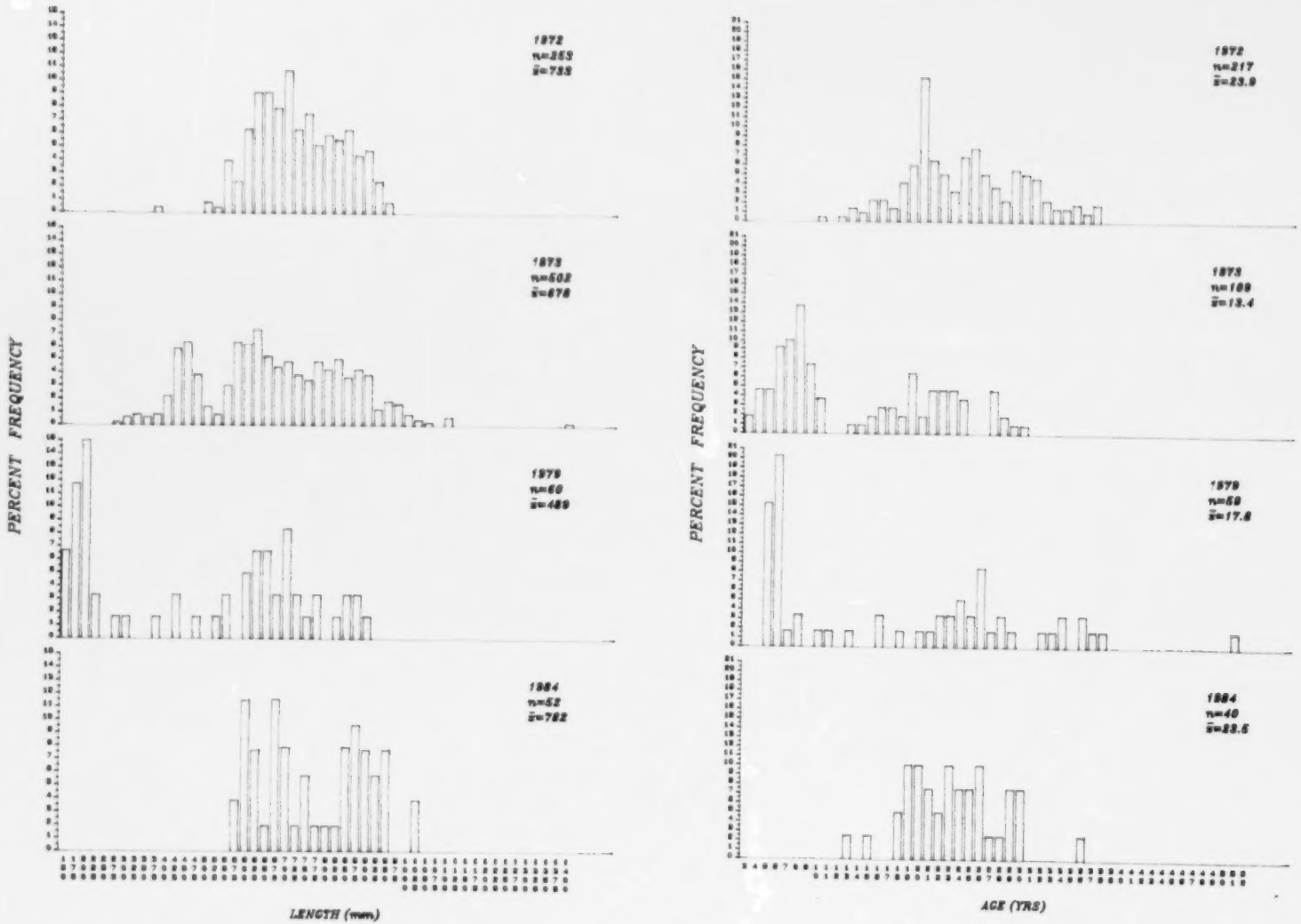


Figure 22. Length and age frequency distributions for angled and retained lake trout, McVicar Arm (north), Great Bear Lake, 1972–1984.

Table 24. Biological data by age group for angled and retained lake trout, McVicar Arm (north), (Great Bear Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES N	MALES LENGTH(MM) MEAN	MALES LENGTH(MM) SD	MALES WEIGHT(G) MEAN	MALES WEIGHT(G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES LENGTH(MM) SD	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED LENGTH(MM) SD	COMBINED WEIGHT(G) MEAN	COMBINED WEIGHT(G) SD	COMBINED K	COMBINED % MAT
13	-	-	-	-	-	-	-	1	608	-	2100	-	0.93	0	1	608	-	2100	-	0.93	0
15	1	695	-	3550	-	1.06	100	-	-	-	-	-	-	-	1	695	-	3550	-	1.06	100
18	-	-	-	-	-	-	-	2	654	79	3425	177	1.29	50	2	654	79	3425	177	1.29	50
19	2	700	26	3463	230	1.01	100	2	596	6	3075	601	1.45	50	4	648	62	3269	434	1.23	75
20	2	670	92	3975	1450	1.30	100	1	752	-	5200	-	1.22	100	4	677	78	3888	1420	1.21	100
21	2	753	168	5613	3376	1.24	100	1	681	-	4100	-	1.30	100	3	729	126	5108	2542	1.26	100
22	2	691	21	3963	477	1.20	100	-	-	-	-	-	-	-	2	691	21	3963	477	1.20	100
23	1	637	-	3200	-	1.24	100	3	933	84	9775	2025	1.20	100	4	859	163	8131	3680	1.21	100
24	2	805	49	6100	1273	1.16	100	1	615	-	3150	-	1.35	100	3	742	115	5117	1926	1.22	100
25	1	634	-	4300	-	1.69	100	2	792	138	7330	2587	1.47	100	3	739	133	6320	2531	1.55	100
26	4	768	134	5219	2555	1.08	100	-	-	-	-	-	-	-	4	768	134	5219	2555	1.08	100
27	-	-	-	-	-	-	-	1	963	-	12000	-	1.34	100	1	963	-	12000	-	1.34	100
28	1	890	-	7675	-	1.09	100	-	-	-	-	-	-	-	1	890	-	7675	-	1.09	100
29	-	-	-	-	-	-	-	3	936	100	8150	354	1.20	100	3	936	100	8150	354	1.20	100
30	2	860	255	7863	5003	1.19	100	1	926	-	8000	-	1.01	100	3	882	184	7908	3538	1.13	100
36	-	-	-	-	-	-	-	1	900	-	8700	-	1.19	100	1	900	-	8700	-	1.19	100
TOTAL	20							19							40 [a]						
MEAN		744	118	5078	2313	1.18			797	155	6474	3182	1.27			766	138	5653	2824	1.22	
MEAN AGE	23.4							23.7							23.5						

a) Bear Island Outpost and Neiland Bay Outpost combined.

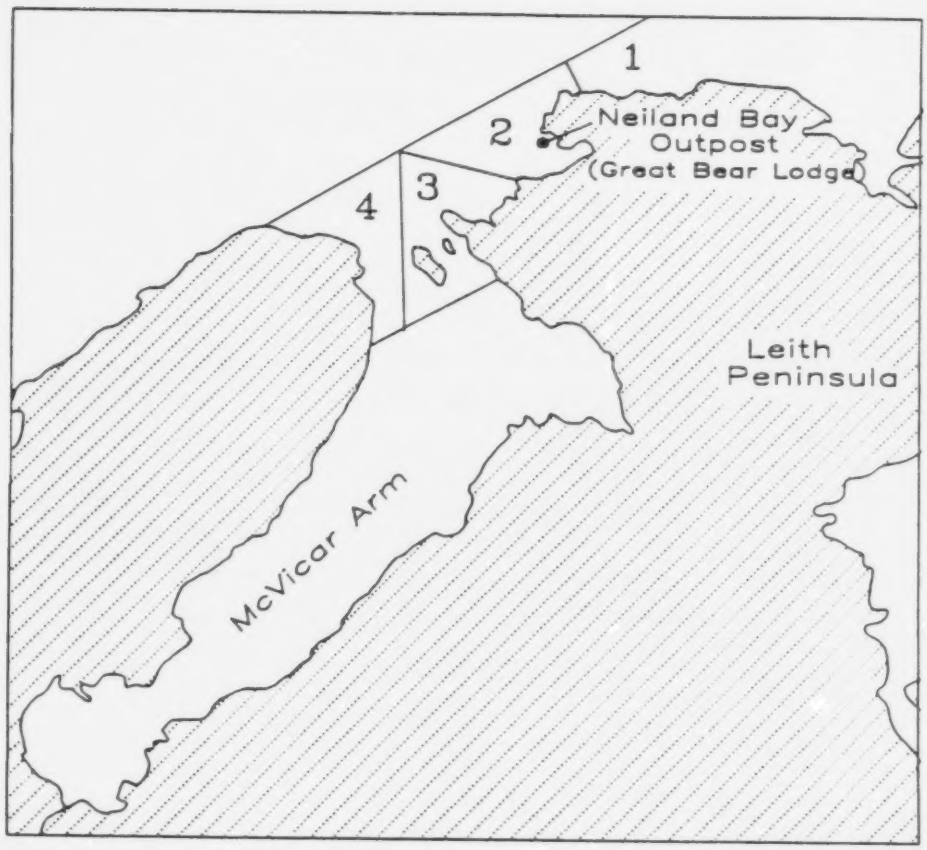


Figure 23. Subarea locations used in the intensive creel census program Neiland Bay Outpost Camp, McVicar Arm (north), Great Bear Lake, 1984.

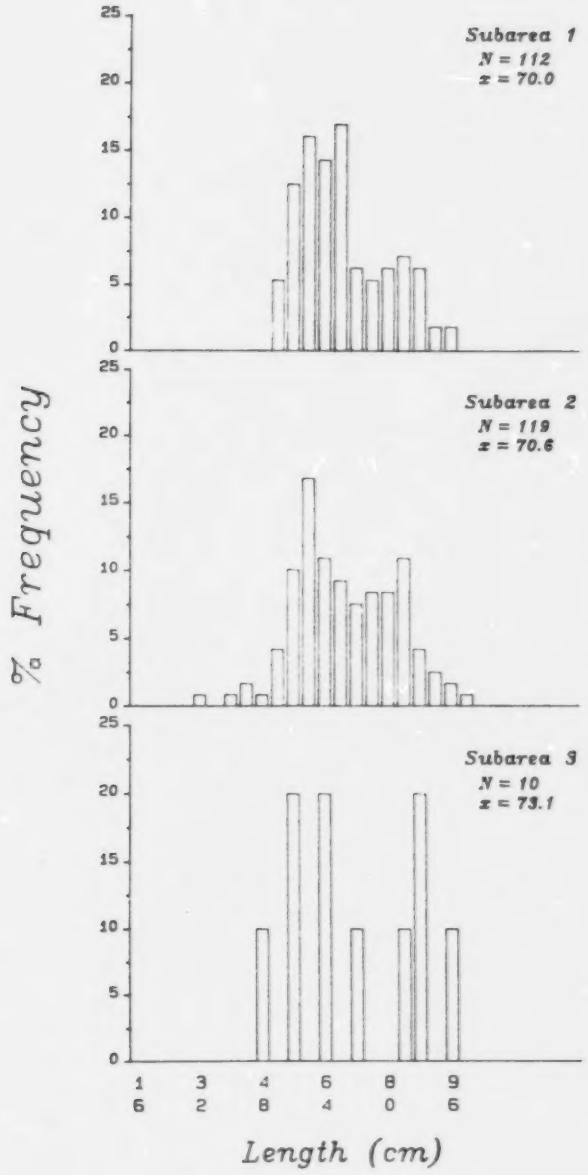


Figure 24. Length frequency distributions by subarea for lake trout caught by angling, Neiland Bay Outpost Camp McVicar Arm (north), Great Bear Lake, 1984.

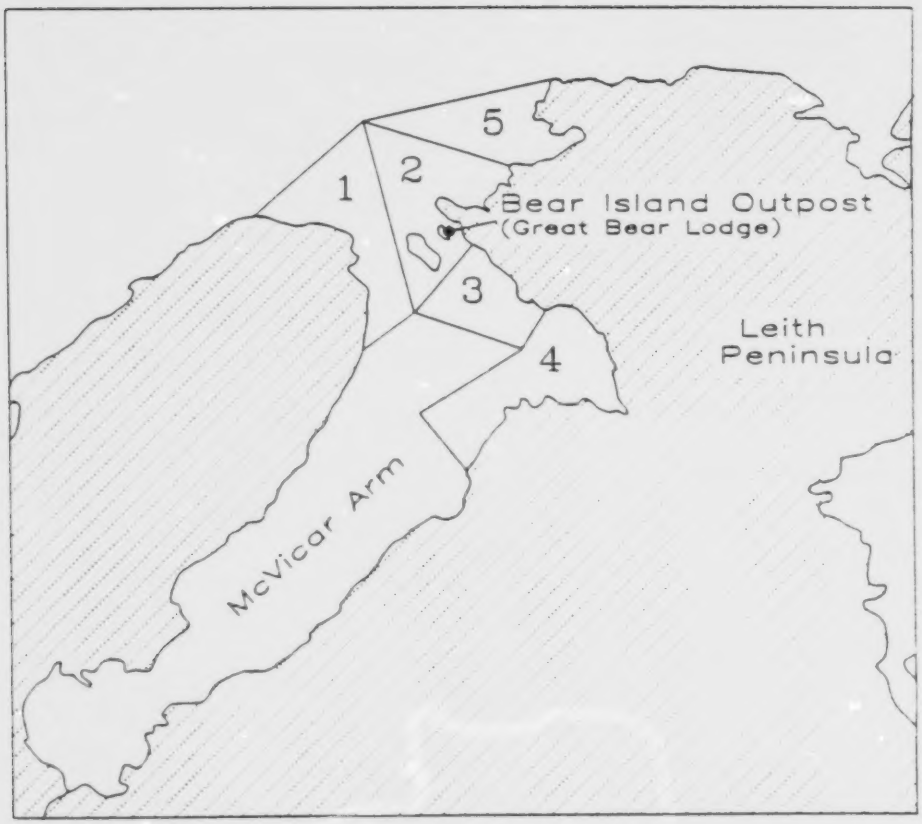


Figure 25. Subarea locations used in the intensive creel census program Bear Island Outpost Camp, McVicar Arm (north), Great Bear Lake, 1984.

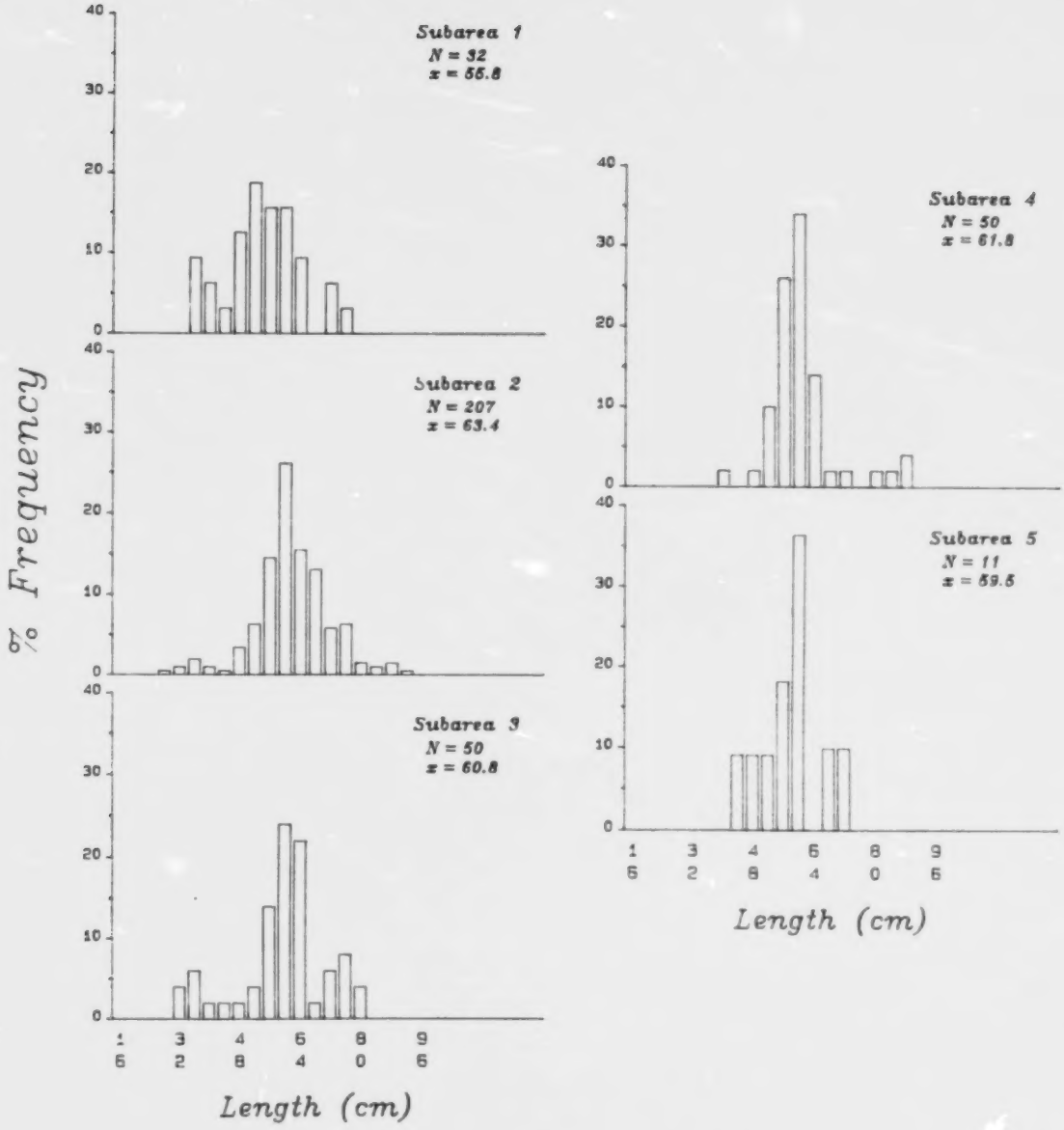


Figure 26. Length frequency distributions by subarea for lake trout caught by angling, Bear Island Outpost Camp, McVicar Arm (north), Great Bear Lake, 1984.

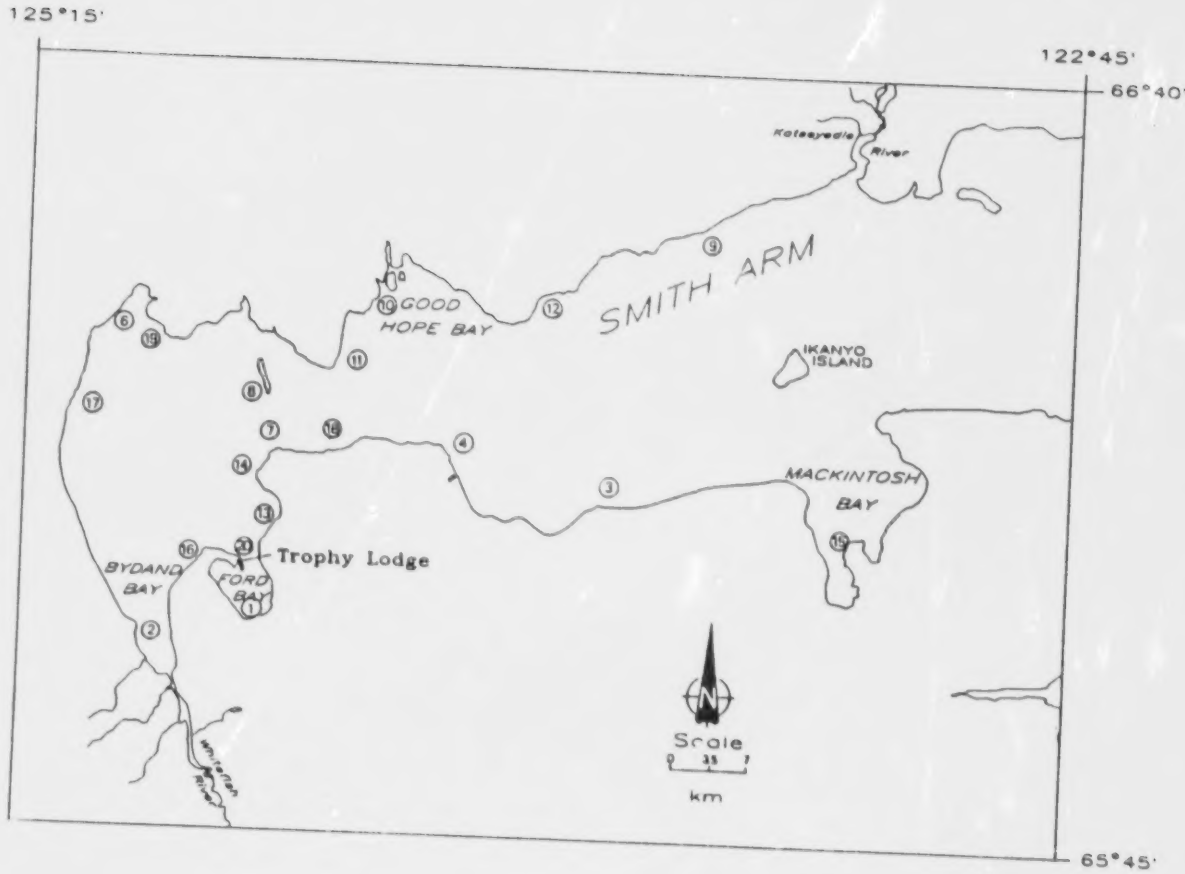


Figure 27. Experimental net locations, Smith Arm, Great Bear Lake, 1985.

Table 25. Catch and catch per unit effort (CPUE) for fish caught by experimental gill nets, Smith Arm, Great Bear Lake, 1985.

		Mesh Size (mm)					Total Catch	CPUE[1]
		38	64	89	114	139		
Lake trout	No.	34	34	42	53	38	201	0.50
	%	16.9	16.9	20.9	26.4	18.9	35.6	
Lake whitefish	No.	27	41	69	57	62	256	0.63
	%	10.5	16.0	27.0	22.3	24.2	45.4	
Round whitefish	No.	10	25	-	-	-	35	0.09
	%	28.6	71.4	-	-	-	6.2	
Lake cisco	No.	29	4	-	-	-	33	0.08
	%	87.9	12.1	-	-	-	5.9	
Arctic grayling	No.	7	6	20	2	-	35	0.09
	%	20.0	17.1	57.1	5.7	-	6.2	
Northern pike	No.	-	3	1	-	-	4	0.01
	%	-	75.0	25.0	-	-	0.7	
Total	No.	107	113	132	112	100	564	1.39
	%	19.0	20.0	23.4	19.9	17.7		

[1]No. fish/100 m of gillnet/24 h

Table 26. Biological data by length interval for lake trout caught by experimental gill nets, Smith Arm, Great Bear Lake, 1985.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
275	1	298	300	-	1.13	0	-	-	-	-	-	-	1	298	300	-	1.13	0
350	2	364	515	21	1.07	0	-	-	-	-	-	-	2	364	515	21	1.07	0
400	2	414	800	71	1.13	0	-	-	-	-	-	-	2	414	800	71	1.13	0
425	2	430	825	35	1.04	0	-	-	-	-	-	-	2	430	825	35	1.04	0
450	2	459	1150	212	1.19	0	2	464	1175	35	1.18	0	4	461	1163	125	1.19	0
475	1	488	1200	-	1.03	0	-	-	-	-	-	-	1	488	1200	-	1.03	0
500	3	509	1367	321	1.03	67	1	505	1600	-	1.24	0	4	508	1425	287	1.08	50
525	2	538	1400	71	0.90	0	-	-	-	-	-	-	2	538	1400	71	0.90	0
550	4	567	2063	214	1.13	100	-	-	-	-	-	-	4	567	2063	214	1.13	100
575	18	588	2200	380	1.08	83	4	585	2188	138	1.09	50	22	587	2198	346	1.08	77
600	18	610	2661	246	1.17	100	4	611	2638	333	1.16	100	22	610	2657	255	1.17	100
625	15	637	3043	251	1.18	100	6	639	3117	181	1.20	100	21	638	3064	231	1.18	100
650	13	655	3231	312	1.15	100	10	659	3400	231	1.19	100	27	656	3304	287	1.16	85
675	2	689	3925	530	1.20	100	3	689	3817	289	1.17	100	7	688	3860	340	1.18	71
700	5	707	4280	451	1.21	100	7	711	4229	515	1.18	100	19	708	4250	469	1.19	63
725	2	730	4325	389	1.11	100	4	736	4313	553	1.08	100	8	733	4317	462	1.09	75
750	3	766	4583	797	1.02	100	2	756	4925	35	1.14	100	8	761	4720	594	1.07	63
775	3	793	5917	794	1.19	100	1	798	5150	-	1.01	100	7	791	5725	753	1.15	57
800	1	810	5700	-	1.07	100	7	813	5893	618	1.10	100	14	811	5869	576	1.09	57
825	1	847	6050	-	1.00	100	3	839	6583	551	1.11	100	5	841	6450	523	1.08	80
850	-	-	-	-	-	-	2	855	6250	71	1.00	100	8	861	6250	71	1.00	25
875	-	-	-	-	-	-	-	-	-	-	-	-	3	891	8800	-	1.23	0
900	1	905	7300	-	0.98	100	-	-	-	-	-	-	1	905	7300	-	0.98	100
925	1	926	7400	-	0.93	100	-	-	-	-	-	-	2	933	7400	-	0.93	50
950	-	-	-	-	-	-	-	-	-	-	-	-	2	955	-	-	-	0
975	-	-	-	-	-	-	-	-	-	-	-	-	2	985	-	-	-	0
1000	-	-	-	-	-	-	-	-	-	-	-	-	2	1010	-	-	-	0
TOTAL	102						56						202					
MEAN		619	2885	1368	1.13			694	3978	1454	1.14			680	3307	1549	1.13	

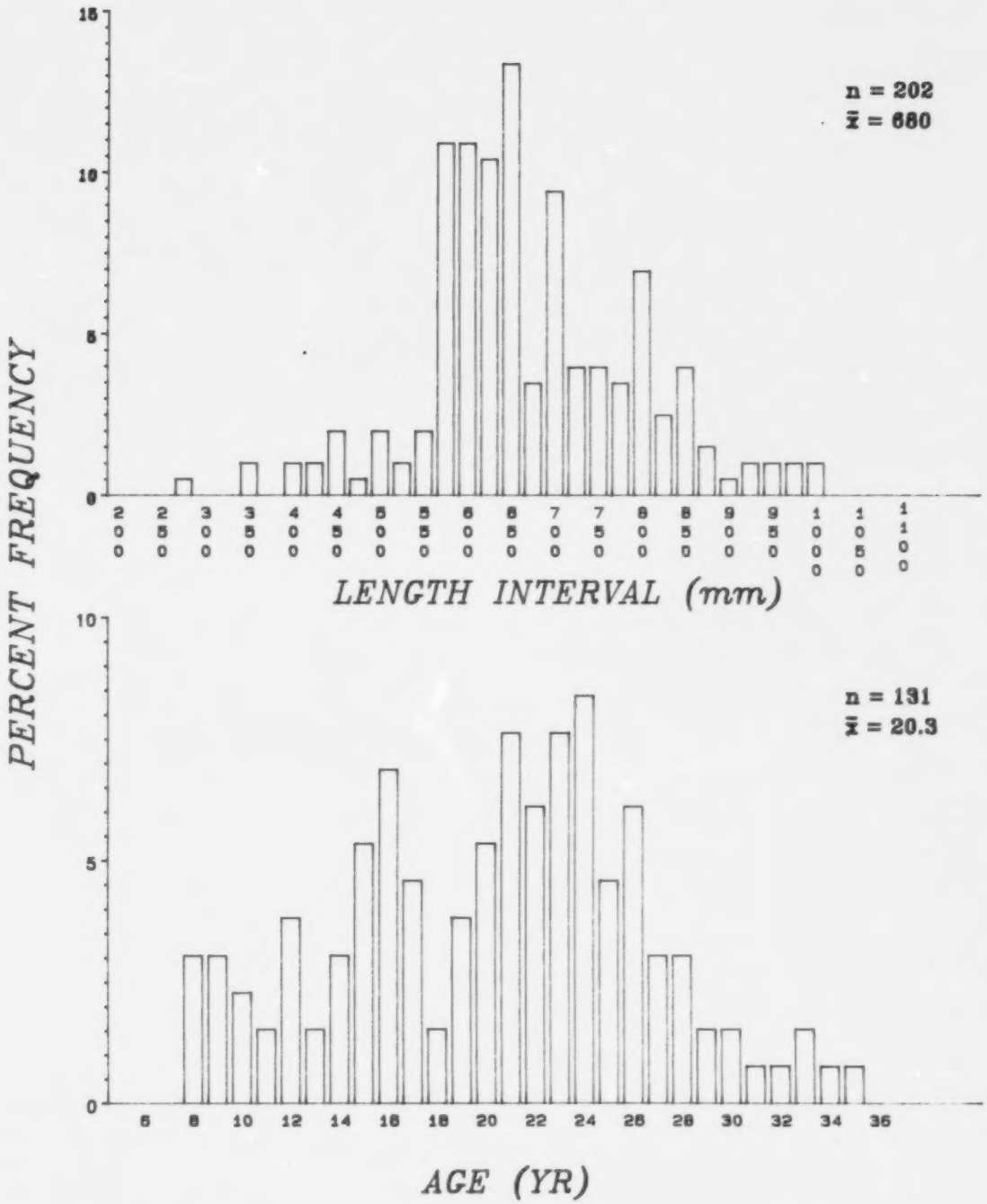


Figure 28. Length and age frequency distributions for lake trout caught by experimental nets, Smith Arm, Great Bear Lake, 1985.

Table 27. Biological data by age group for lake trout caught by experimental gill nets, Smith Arm, Great Bear Lake, 1985.

AGE (YR)	MALES							FEMALES							COMBINED						
	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT
8	4	390	33	658	170	1.09	0	-	-	-	-	-	-	-	4	390	33	658	170	1.09	0
9	4	402	71	813	409	1.16	0	-	-	-	-	-	-	-	4	402	71	813	409	1.16	0
10	2	515	18	1175	247	0.86	50	1	470	-	1200	-	1.16	0	3	500	29	1183	176	0.96	33
11	2	518	42	1325	177	0.96	0	-	-	-	-	-	-	-	2	518	42	1325	177	0.96	0
12	3	549	83	1867	931	1.06	67	2	550	64	1975	530	1.18	50	5	549	67	1910	712	1.11	60
13	2	550	42	1825	318	1.10	50	-	-	-	-	-	-	-	2	550	42	1825	318	1.10	50
14	3	644	120	3233	1502	1.14	67	1	458	-	1150	-	1.20	0	4	598	135	2713	1609	1.16	50
15	4	598	16	2313	160	1.08	100	3	642	80	2950	1212	1.07	67	7	617	53	2586	787	1.08	86
16	6	603	49	2492	621	1.13	83	3	697	127	4200	2422	1.14	100	9	634	88	3061	1561	1.13	89
17	5	668	84	3710	1622	1.19	100	1	582	-	2050	-	1.04	0	6	654	83	3433	1601	1.16	83
18	1	645	-	3200	-	1.19	100	1	652	-	3150	-	1.14	100	2	649	5	3175	35	1.16	100
19	2	598	28	2625	530	1.22	100	3	679	72	3617	1114	1.13	100	5	647	69	3220	993	1.17	100
20	5	685	76	3880	1631	1.15	100	2	658	67	3200	919	1.11	100	7	677	69	3686	1423	1.14	100
21	4	589	13	2413	338	1.18	100	6	692	73	4067	977	1.22	100	10	651	76	3405	1139	1.20	100
22	4	624	20	2900	147	1.20	75	4	677	83	3575	1079	1.14	100	8	651	63	3238	799	1.17	88
23	8	625	45	2819	1165	1.11	100	2	732	14	4500	354	1.15	100	10	646	60	3155	1254	1.12	100
24	8	645	37	3188	503	1.18	100	3	683	61	3867	993	1.20	100	11	655	45	3373	689	1.19	100
25	4	622	24	2538	293	1.06	100	2	586	49	3300	424	1.03	100	6	643	44	2792	492	1.05	100
26	6	683	77	3558	957	1.11	100	2	694	13	4150	0	1.25	100	8	686	66	3706	854	1.14	100
27	3	624	30	2900	328	1.20	100	1	663	-	3500	-	1.20	100	4	634	31	3050	402	1.20	100
28	2	709	86	4250	1768	1.15	100	2	833	38	5800	566	1.00	100	4	771	90	5025	1396	1.08	100
29	1	605	-	2400	-	1.08	100	1	849	-	6950	-	1.14	100	2	727	173	4675	3217	1.11	100
30	-	-	-	-	-	-	-	2	845	7	6125	247	1.01	100	2	845	7	6125	247	1.01	100
31	1	590	-	2100	-	1.02	100	-	-	-	-	-	-	-	1	590	-	2100	-	1.02	100
32	1	905	-	7300	-	0.98	100	-	-	-	-	-	-	-	1	905	-	7300	-	0.98	100
33	2	721	126	4200	2121	1.07	100	-	-	-	-	-	-	-	2	721	126	4200	2121	1.07	100
34	-	-	-	-	-	-	-	1	804	-	5300	-	1.02	100	1	804	-	5300	-	1.02	100
35	1	926	-	7400	-	0.93	100	-	-	-	-	-	-	-	1	926	-	7400	-	0.93	100
TOTAL	88							43							131						
MEAN		612	105	2796	1403	1.12			685	100	3814	1464	1.14			636	109	3130	1497	1.13	
MEAN AGE	19.8							21.2							20.3						

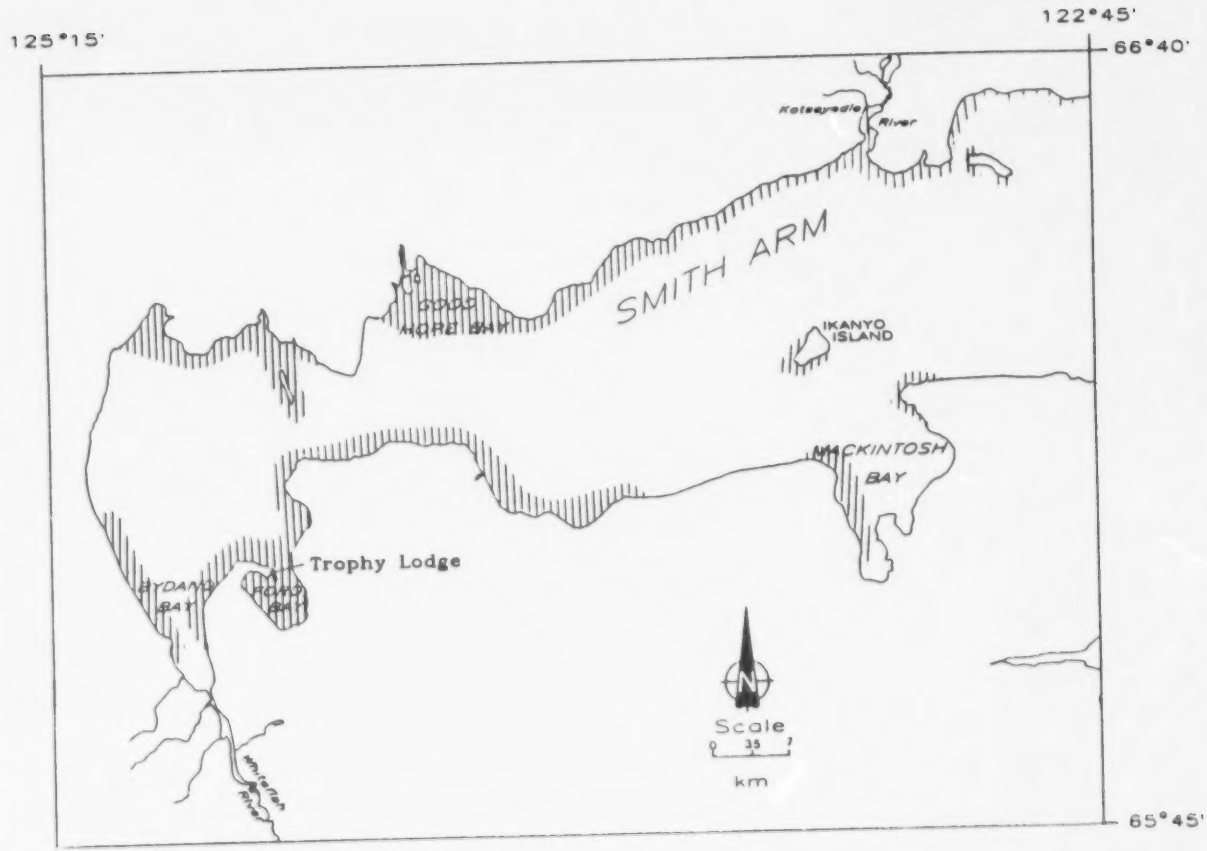


Figure 29. Areas generally fished in Smith Arm, Great Bear Lake, 1985.

Table 28. Biological data by length interval for angled and retained lake trout, Smith Arm, (Trophy Lodge area), Great Bear Lake, 1985.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
425	1	430	850	-	1.07	0	1	449	1000	-	1.10	0	2	440	925	106	1.09	0
450	2	464	1600	919	1.58	50	1	465	1050	-	1.04	0	3	464	1417	723	1.40	33
475	2	486	1250	71	1.09	0	1	497	1400	-	1.14	0	3	489	1300	100	1.11	0
500	8	510	1450	104	1.09	0	1	523	1450	-	1.01	0	9	511	1450	97	1.08	0
525	3	535	1700	132	1.11	67	3	531	1550	132	1.03	0	6	533	1625	144	1.07	33
550	11	560	2041	235	1.16	73	4	564	2063	315	1.15	25	15	561	2047	247	1.16	60
575	15	589	2280	244	1.12	87	9	589	2467	317	1.21	78	26	589	2327	284	1.14	77
600	27	612	2787	447	1.22	93	7	615	2750	240	1.18	71	36	612	2789	403	1.21	83
625	19	635	3147	354	1.23	89	28	636	3120	315	1.21	93	50	636	3148	332	1.22	86
650	21	663	3426	339	1.18	100	37	664	3558	488	1.22	95	60	663	3498	440	1.20	93
675	19	686	3642	248	1.13	100	20	685	3616	426	1.13	85	42	685	3621	343	1.13	86
700	5	710	3970	315	1.11	100	12	710	4129	383	1.15	100	19	710	4113	354	1.15	89
725	7	733	4514	523	1.14	100	7	736	4629	345	1.16	100	18	736	4561	393	1.15	78
750	2	773	5450	1131	1.18	100	1	750	4450	-	1.05	100	8	758	5075	592	1.16	38
775	3	790	5383	208	1.09	100	6	787	5000	261	1.03	100	13	787	5204	486	1.07	69
800	1	810	7250	-	1.36	100	4	815	5950	720	1.10	100	7	810	6121	769	1.15	71
825	-	-	-	-	-	-	1	848	8300	-	1.36	100	2	839	7725	813	1.31	50
850	-	-	-	-	-	-	1	862	6550	-	1.02	100	2	861	6175	530	0.97	50
900	-	-	-	-	-	-	-	-	-	-	-	-	2	910	8675	1308	1.15	0
TOTAL	146						144						323					
MEAN		630	3026	1032	1.17			664	3511	1069	1.17			655	3406	1213	1.17	

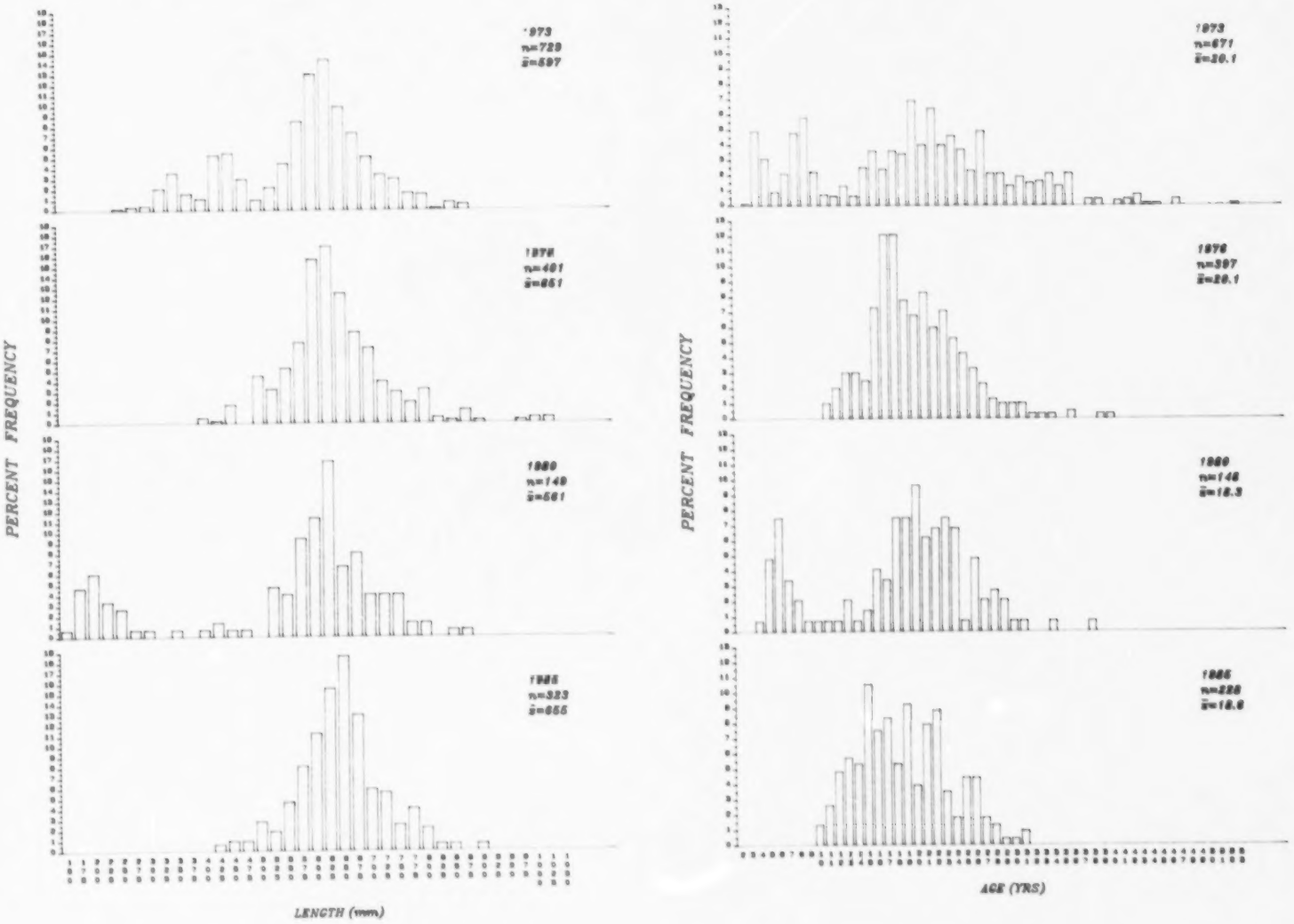


Figure 30. Length and age frequency distributions for angled and retained lake trout, Smith Arm, Great Bear Lake, 1973–1985.

Table 29. Biological data by age group for angled and retained lake trout, Smith Arm, (Trophy Lodge area), Great Bear Lake, 1985.

AGE (YR)	MALES							FEMALES							COMBINED						
	LENGTH(MM)			WEIGHT(G)			%	LENGTH(MM)			WEIGHT(G)			%	LENGTH(MM)			WEIGHT(G)			%
	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
10	2	492	88	1500	919	1.17	0	1	537	-	1700	-	1.10	0	3	507	67	1567	660	1.14	0
11	4	497	28	1263	210	1.02	0	2	528	4	1475	35	1.00	0	6	507	27	1333	197	1.02	0
12	5	526	43	1570	323	1.07	20	6	611	57	2433	578	1.06	17	11	572	66	2041	642	1.07	18
13	9	546	29	1806	223	1.11	44	4	545	91	1938	950	1.12	25	13	545	51	1846	513	1.11	38
14	8	615	47	2488	552	1.07	75	4	617	45	2900	492	1.24	100	12	615	44	2625	549	1.13	83
15	11	606	54	2518	567	1.11	82	13	635	65	2992	783	1.14	69	24	622	61	2775	720	1.13	75
16	11	643	48	3059	690	1.13	91	6	656	35	3017	347	1.08	67	17	647	44	3044	579	1.11	82
17	9	651	63	3244	842	1.16	100	10	652	49	3155	686	1.13	100	19	651	55	3197	743	1.14	100
18	7	638	54	2836	638	1.09	71	5	675	50	3380	695	1.09	80	12	653	53	3063	690	1.09	75
19	8	682	76	3569	1219	1.08	100	13	680	66	3731	865	1.18	92	21	681	68	3669	988	1.14	95
20	3	648	22	3800	132	1.41	100	6	695	72	3975	914	1.19	100	9	679	63	3917	731	1.26	100
21	7	663	77	3392	1091	1.22	100	11	655	54	3477	722	1.23	100	18	658	62	3447	836	1.23	100
22	10	620	62	3190	619	1.36	100	10	682	37	3655	693	1.14	100	20	651	59	3423	683	1.25	100
23	4	676	47	3750	1129	1.19	100	4	661	33	3650	1109	1.26	100	8	668	38	3700	1038	1.22	100
24	2	645	43	3125	601	1.16	100	2	672	30	4450	71	1.48	100	4	658	34	3788	841	1.32	100
25	2	624	20	3525	247	1.45	100	8	688	56	4281	1175	1.29	100	10	676	57	4130	1087	1.33	100
26	7	672	69	3457	963	1.12	100	3	694	31	3950	477	1.18	100	10	678	59	3605	852	1.14	100
27	2	637	21	3475	884	1.34	100	2	722	95	4000	990	1.07	100	4	679	75	3738	824	1.20	100
28	2	663	16	3475	35	1.20	100	1	645	-	3150	-	1.17	100	3	657	15	3367	189	1.19	100
29	1	655	-	3300	-	1.17	100	-	-	-	-	-	-	-	1	655	-	3300	-	1.17	100
30	-	-	-	-	-	-	-	1	702	-	4100	-	1.19	100	1	702	-	4100	-	1.19	100
31	1	772	-	6250	-	1.36	100	1	792	-	5400	-	1.09	100	2	782	14	5825	601	1.22	100
TOTAL	115							113							228						
MEAN		623	73	2900	1013	1.16			656	65	3376	967	1.17			640	71	3137	1017	1.16	
MEAN AGE	18.2							19.0							18.6						

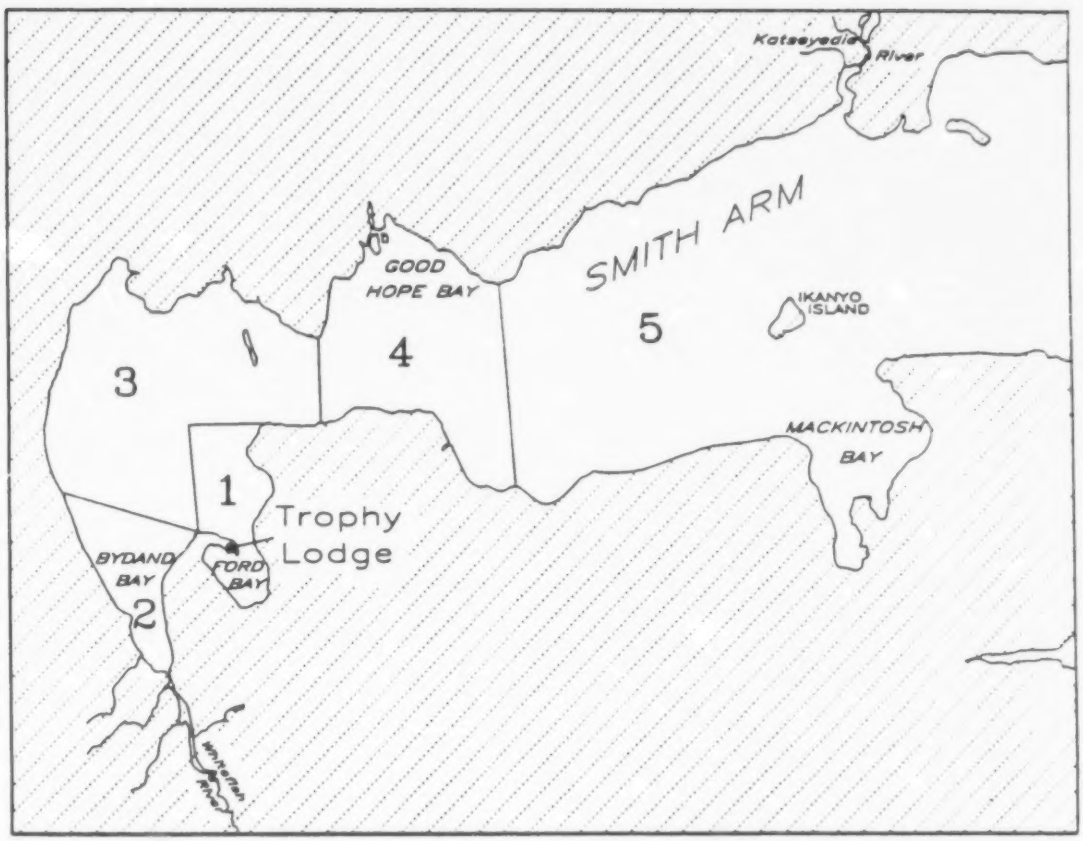


Figure 31. Subarea locations used in the intensive creel census program Smith Arm, Great Bear Lake, 1985.

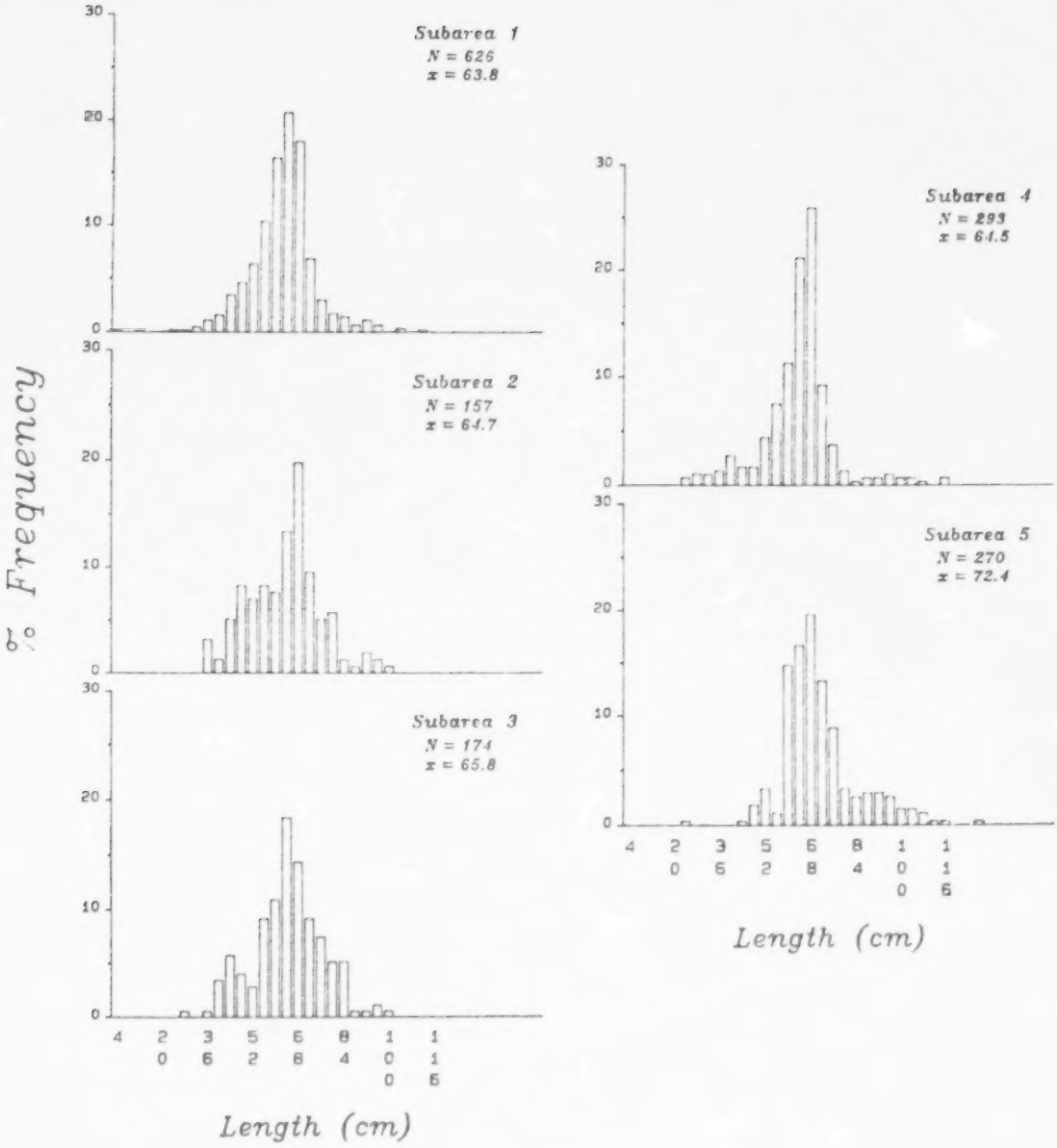


Figure 32. Length frequency distributions by subarea for lake trout caught by angling, Smith Arm, Great Bear Lake, 1985.

Appendix 1. Summary of methods used to calculate catch, effort, and catch per unit effort statistics from experimental gill nets and a standard creel census.

1. Experimental Gill Nets

CPUE (Catch per Unit Effort)
= number or weight of fish per 100 meters of gill net per 24 hour set duration

$$= \frac{C \times 24\ h \times 100\ m}{S \times GL}$$

where:
C = total catch of fish (number or weight)
S = length of time the gill nets are set (hours)
GL = total length of the gill net used (meters)
h = hours
m = meter

2. Standard Creel Census

d^1 = days actually censused during the census period

d = number of days of the census period

D = number of days the lodge was in operation and guests were able to fish

AP = number of individual anglers present during d^1

I = number of interviews conducted during d^1

IP = number of interviews possible during d^1
= Σ(maximum number of individual anglers for a guest week X number of days in the guest week)

PCP = percent of the census period censused

$$= \frac{d^1 \times 100\%}{d}$$

PFS = percent of the lodge operation censused

$$= \frac{d^1 \times 100\%}{D}$$

TIP = number of interviews possible for the census period

$$= \frac{IP \times 100\%}{PCP}$$

NA = total number of anglers possible during D

$$= \frac{AP \times 100\%}{PFS}$$

NI = total number of angler days possible during D

$$= \frac{D \times IP}{d^1}$$

H = harvest of lake trout for d^1
= K + SL + (R X release mortality)
where:
K = Kept = total number of fish (by species) kept

R = Released = total number of fish (by species) released

Release mortality = the mortality of lake trout caught by angling and released
= 0.07

SL = shore lunch
= number of fish (by species) utilized for shore lunch
= a) all fish assumed to be lake trout
b) SL(E) = estimated, using extrapolation method, from data obtained from the intensive creel census program

$$= \frac{SL \text{ (intensive creel census)}}{\text{Total SL of all species (intensive creel census)}} \times \text{Total SL (standard creel census)}$$

TH = total harvest of lake trout for D

$$= \frac{H \times IP}{I}$$

A = Σ (individual anglers interviewed each day during d^1)

a^1 = Σ (number of angler interviews conducted each day during d^1)

AH = Σ (hours individual anglers spend fishing each day during d^1)

TAH = total angler hours possible during d^1

$$= \frac{AH \times IP}{I}$$

TAHP = total angler hours possible during D

$$= \frac{AH \times TIP}{I}$$

CPUE (Catch per Unit Effort) during d^1
where:
C = catch
= the total number of lake trout caught during d^1 (includes kept, released, and shorelunch)

C/AH = catch per angler hour

C/AD = catch per angler day

C/A = catch per angler interviewed

UH = utilized hectare
= area utilized by the lodges for angling (area determined from interviews with the lodges asking them which areas they fished. The areas were drawn on a map a distance of 2.4 kilometers from the shoreline. The area was then determined using a polar planimeter as described by Nielson and Johnson,(1983).

TH/UH = total harvest per utilized hectares

TH/NA = total harvest per angler

TH/NI = total harvest per angler day

Appendix 2. Summary of standard creel census and fishing season statistics by area and sport fishing lodge, Great Bear Lake, 1984-1985.

CREEL CODE	DEASE ARM (GREAT BEAR LAKE LODGE AREA)	McTAVISH ARM (NORTH) (ARCTIC CIRCLE LODGE AREA) [a]	McTAVISH ARM (SOUTH) (BRANSONS LODGE AREA)	MCVICAR ARM (NORTH) (GREAT BEAR LODGE AREA)	SMITH ARM [b] (TROPHY LODGE AREA)
d'	44	55	49	30	54
d	44	55	49	30	54
D	44	62	57	30	54
AP	313	175	270	178	318
I	1325	944	1429	889	1561
IP	2191	1225	1890	1068	1908
PCP	100	100	100	100	100
PFS	100	88	85	100	100
TIP	2191	1225	1890	1068	1908
NA	313.00	197.27	314.10	178	318.00
NI	2191.00	1380.91	2198.57	1068.00	1908.00
Harvest					
H	2378.11	1807.40	1938.61	1350.00	2425.99
TH	3932.41	2345.41	2564.01	1626.00	2965.27
A	1225	905	1424	889	1561
AD	1325	944	1429	889	1561
AH	7679.00	5043.65	8379.50	4961.50	8826.00
TAH	12697.88	6544.99	11082.75	5958.92	10787.96
TAHP	12697.88	6544.99	11082.75	5958.92	10787.96
CPUE					
C/AH	1.05	1.01	0.81	1.02	0.88
C/AD	6.11	5.38	4.76	5.72	4.99
C/A	6.61	5.61	4.77	5.36	4.99
AREA UTILIZED					
UH	54396.16	48892.83	44070.63	26972.77	36345.25
YIELD					
TH/UH	0.07	0.05	0.06	0.06	0.08
TH/NA	12.56	11.89	8.16	9.14	9.32
TH/NI	1.79	1.70	1.17	1.52	1.55
TH/TAHP	0.31	0.36	0.23	0.27	0.27

a) Does not include data for anglers from Bransons Lodge.
b) Does not include data for anglers from Bransons Outpost Camp.

Appendix 3. Example of a standard creel census form.

Environment Canada Environnement Canada
Fisheries and Marine Pêches et Mer

Resource Management Branch
Fishery Management Division
CATCH RECORD – SPORTS FISHERY

Direction de la gestion des ressources
Division de la gestion des pêches
RELEVÉ DES PRISES – PÊCHE SPORTIVE

| | | |

Appendix 4. Example of an intensive creel census form.

INTENSIVE CREEL CENSUS | | | | (Day | Month | Year)

Lodge _____

Guides Name _____

1. Anglers Name _____

2. Anglers Name _____

Effort _____ Hours

Time Started _____

Time Finished _____

Grid Location Effort

1 _____ hrs	2 _____ hrs
3 _____ hrs	4 _____ hrs

CATCH EFFORT

Sample No.	*Species*	*Length (cm)*	*Catch use*	*Grid Location*
1.	LT AG NP	_____	K R SL	1 2 3 4
2.	LT AG NP	_____	K R SL	1 2 3 4
3.	LT AG NP	_____	K R SL	1 2 3 4
4.	LT AG NP	_____	K R SL	1 2 3 4
5.	LT AG NP	_____	K R SL	1 2 3 4
6.	LT AG NP	_____	K R SL	1 2 3 4
7.	LT AG NP	_____	K R SL	1 2 3 4
8.	LT AG NP	_____	K R SL	1 2 3 4
9.	LT AG NP	_____	K R SL	1 2 3 4
10.	LT AG NP	_____	K R SL	1 2 3 4
11.	LT AG NP	_____	K R SL	1 2 3 4
12.	LT AG NP	_____	K R SL	1 2 3 4
13.	LT AG NP	_____	K R SL	1 2 3 4
14.	LT AG NP	_____	K R SL	1 2 3 4
15.	LT AG NP	_____	K R SL	1 2 3 4

Appendix 5. Summary of information on sample dates, sample locations, set duration, depth, and catch per unit effort (CPUE) by area for experimental gill net sets, Great Bear Lake, 1984-85.

Date	Set Number	Location Number	Set Duration (h)	Surface Water Temp. (°C)	Water Depth (m)	Total Catch	CPUE[a]
Dease Arm							
Aug. 2	1	1	2.50	10	2.0-12.0	43	166.1
3	2	2	1.75	11	1.5-12.0	-	-
3	3	3	1.75	13	2.5- 8.0	1	5.5
4	4	4	2.25	14	3.5- 3.5	9	38.4
4	5	5	2.50	13	1.5-10.0	124	476.2
6	6	6	1.50	11	1.5- 6.0	1	6.4
6	7	7	2.25	11	1.5- 1.5	1	4.3
6	8	8	1.00	12	1.5- 7.0	1	9.6
7	9	9	2.00	11	2.0-13.0	1	4.8
7	10	10	4.75	11	2.0- 3.0	3	6.1
8	11	11	1.25	9.5	2.0- 2.0	7	53.8
8	12	12	3.00	9.0	9.0-20.0	1	3.2
9	13	13	4.00	10	1.0- 3.5	1	2.4
10	14	14	47.75	N/A	1.5-25.0	26	5.2
13	15	15	4.00	8	1.5-16.0	1	2.4
16	16	16	19.00	9	2.0- 6.0	14	7.1
17	17	17	23.50	9	9.0- 9.0	10	4.1
18	18	18	8.25	9	2.0- 7.0	6	7.0
19	19	19	6.25	10	2.5- 2.5	30	46.1
19	20	20	8.75	12	2.5- 2.5	10	11.0
20	21	21	6.25	9	1.5- 2.0	58	89.1
23	22	22	2.00	9	2.0-18.0	3	14.4
McTavish Arm (north)							
July 30	1	1	8.75	11	3.0-54.8	34	37.3
31	2	2	8.67	10	4.0-45.7	15	16.6
31	3	3	1.00	9	5.0-36.6	2	6.4
Aug. 2	4	4	3.00	10	6.0-79.2-6.0	13	41.6
3	5	5	8.50	13	5.0-27.4	23	26.0
5	6[1]	6	8.83	9	9.1- 9.1	27	36.7
6	7	7	9.00	12	6.1-18.2	19	20.3
7	8	8	9.00	10	9.1-42.6	21	22.4
9	9	9	9.30	10.5	3.0-12.2	9	9.3
10	10	10	3.00	11	3.0-12.2	5	16.0
12	11	11	9.50	6	6.0-22.9	43	43.5
13	12	12	9.00	9	4.6-42.7	24	25.6
14	13	13	10.25	5	4.6-12.8	54	50.6
17	14	14	9.30	8	6.1-61.0	90	92.9
17	15	15	2.75	8.5	6.1-13.7	7	24.4
19	16	16	2.50	7	9.1- 7.6	5	19.2
McTavish Arm (south)							
July 5	1	1	2.17	14	1.5-23.0	-	-
5	2	2	3.47	9	3.0-21.3	1	2.9
7	3	3	4.00	16	3.0-45.7	3	7.2
8	4	4	8.85	8	4.0-31.0	2	2.2
9	5	5	9.35	5	6.5- 7.0	4	4.1
10	6	6	8.50	12	11.0-34.0	5	5.6
11	7	7	8.80	14	7.0-21.0	11	12.0
12	8	8	17.10	12	9.0-11.0	14	7.9
13	9	9	9.25	11	9.0-12.5	2	2.1
15	10	10	15.10	9	2.0-61.0	20	12.7
15	11	11	17.80	6	3.0-12.5	-	-
19	12	12	8.70	10	3.0-13.5	3	3.3
20	13	13	7.80	7	3.0-85.3	7	8.6
21	14	14	8.65	5	3.0-73.0	13	14.4
22	15	15	6.60	9	2.0-76.0	7	10.2
23	16	16	8.00	12	3.0-36.6	8	9.6
McTavish Arm (south) - cont'd							
July 24	17	17	8.70	7	3.0-18.3	3	3.3
25	18	18	7.00	8	3.0-13.0	7	9.6
26	19	19	7.60	13	4.0-45.7	11	13.9
27	20	20	8.00	12	4.0-21.3	11	13.2
McVicar Arm (north)							
July 4	1	1	2.00	N/A	6.0	1	4.8
4	2	2	3.25	7	10.0-15.0	-	-
4	3	3	3.75	8	6.0- 7.0	1	2.6
5	4	4	3.75	8	4.0	-	-
5	5	5	3.25	9	2.5- 5.0	3	8.9
6	6	6	2.00	11	2.0	1	4.8
6	7	7	2.25	11	2.5- 5.0	1	4.3
6	8	8	2.00	12	0.0- 3.5	-	-
7	9	9	5.00	10	3.0- 4.0	12	23.0
7	10	2	5.00	9	10.0-15.0	-	-
8	11	10	21.25	9	2.0- 5.0	78	35.2
10	12	11	13.25	10	1.0-11.5	27	19.6
10	13	12	5.00	10	2.0- 3.5	3	5.8
11	14	13	13.75	10	3.0- 6.0	4	2.8
12	15	14	21.75	10	2.0- 2.5	14	6.2
13	16	15	22.50	12	1.0- 2.5	15	6.4
14	17	16	23.00	11	1.5- 3.0	20	8.3
15	18	17	13.25	10	2.0- 3.0	20	18.5
16	19	18	10.00	8	1.5- 3.0	3	2.9
17	20	19	17.50	9	2.0	11	6.0
18	21	20	18.75	12	4.0- 7.0	20	10.2
19	22	21	14.00	11.5	1.5- 3.0	19	13.0
20	23	8	11.00	9.0	2.0- 5.0	11	9.6
Smith Arm							
July 3	1	1	7.00	14	2.0- 6.0	81	111.1
6	2	2	9.25	7	1.0- 6.0	34	35.3
9[2]	3	3	8.50	4	3.5- 3.5	9	9.2
10[2]	4	4	21.00	4	3.0- 3.0	11	5.1
12[2]	5	5	10.75	8	4.5- 5.5	49	44.7
13[2]	6	6	9.50	6	3.0- 5.0	6	6.2
16[2]	7	7	8.75	9	3.0-12.0	19	21.1
16[2]	8	8	4.25	7	4.5- 7.0	1	2.3
19[2]	9	9	9.00	7	3.0- 6.0	2	2.2
19[2]	10	10	3.00	7	3.0-12.0	-	-
21[2]	11	11	6.25	6	4.5- 7.0	-	-
22[2]	12	12	13.00	5	2.5- 6.5	2	1.5
23[2]	13	13	6.00	9	2.5- 6.0	2	3.3
24[2]	14	14	17.25	10	2.5- 8.5	8	4.5
25[2]	15	15	10.25	9	2.0- 5.0	20	19.1
26[2]	16	16	9.75	10	2.5- 4.0	51	51.2
27[2]	17	17	10.00	9	5.0- 8.0	20	19.6
Aug. 13[2]	18	18	11.00	12	1.5- 4.0	95	84.6
13[2]	19	19	7.75	10	1.5- 4.0	-	-
14[2]	20	20	16.00	12	2.0- 7.5	155	94.9

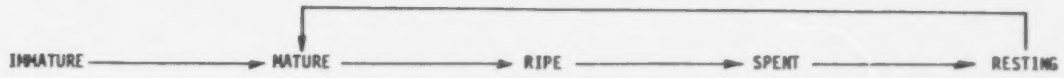
[1]38, 64, 89, 114 mm mesh x 50 m each
[2]33 mm x 45 m; 64, 89, 114, 139 mm mesh x 50 m each
[a]Number fish/100 m/ 24 h
N/A = not available

Appendix 6. Summary of weight-length relationships ($\log_{10} W = a + b (\log_{10} L)$) for each fish species (sexes combined), Great Bear Lake, 1984-85.

Species	N	Y-intercept (a)	Slope (b)	Standard Dev. of b (SD_b)	95% C.I. of b
Dease Arm					
Lake trout					
gillnetted	96	-5.0806	3.0391	0.0509	2.9380-3.1402
angled	292	-4.3619	2.8032	0.0540	2.6794-2.9000
combined	388	-5.0819	3.0543	0.0363	2.9832-3.1254
Lake whitefish					
gillnetted	8	-3.2098	2.3837	0.5534	1.0295-3.7379
Arctic grayling					
angled	73	-4.3070	2.7708	0.1136	2.5439-2.9977
Lake cisco					
gillnetted	21	-6.0809	3.4832	0.3050	2.8448-4.1216
McTavish Arm (north)					
Lake trout					
gillnetted	192	-5.3391	3.1429	0.0326	3.0790-3.2068
angled	542	-5.1104	3.0594	0.0252	3.0100-3.1088
combined	724	-5.2430	3.1069	0.0167	3.0742-3.1396
Lake whitefish					
gillnetted	5	-5.5578	3.2615	0.8001	0.7156-5.8074
Arctic grayling					
angled	155	-5.1073	3.0617	0.0655	2.9333-3.1901
Lake cisco					
gillnetted	6	-6.3614	3.5808	0.4176	2.4215-4.7401
McTavish Arm (south)					
Lake trout					
gillnetted	126	-4.9839	3.0151	0.0351	2.9463-3.0839
angled	260	-1.8155	1.8945	0.1143	1.6705-2.1185
combined	386	-3.9099	2.6300	0.0642	2.5042-2.7558
Arctic grayling					
angled	28	-4.2425	2.7513	0.1407	2.4620-3.0406
Northern pike					
angled	11	-4.1990	2.6625	0.2039	2.2013-3.1237
McVicar Arm (north)					
Lake trout					
gillnetted	131	-4.7264	2.9255	0.0491	2.8293-3.0217
angled	52	-4.2964	2.7848	0.1116	2.5607-3.0089
combined	183				
Lake whitefish					
gillnetted	36	-5.9364	3.4070	0.2753	2.8448-3.9692
Round whitefish					
gillnetted	12	-5.6692	3.2574	0.2378	2.7276-3.7872
Northern pike					
gillnetted	2	-3.8737	2.5475	0.0	-
Lake cisco					
gillnetted	35	-2.8424	2.1452	0.2291	1.6774-2.6130
Smith Arm					
Lake trout					
gillnetted	159	-4.9566	3.0028	0.0551	2.8948-3.1108
angled	323	-4.7691	2.9409	0.0566	2.8299-3.0519
combined	492	-4.8841	2.9802	0.0395	2.9027-3.0576
Lake whitefish					
gillnetted	202	-5.2196	3.1236	0.0543	3.0172-3.2300
combined	203	-5.2265	3.1263	0.0542	3.0201-3.2325
Round whitefish					
gillnetted	35	-5.3113	3.1425	0.1929	2.7486-3.5364
Arctic grayling					
gillnetted	25	0.6212	0.8850	0.3309	0.2004-1.5696
angled	187	-3.9634	2.6441	0.0992	2.4497-2.8385
combined	212	-3.7731	2.5716	0.0969	2.3817-2.7615
Northern pike					
gillnetted	4	-4.7146	2.8443	0.0640	2.5689-3.1197
angled	39	-4.7556	2.8755	0.1639	2.5428-3.2082
combined	43	-5.0532	2.9788	0.1093	2.7579-3.1997
Lake cisco					
gillnetted	18	-8.2167	4.3746	0.5586	3.1960-5.5532

Appendix 7. A discription of the relative stages of maturity used for northern fishes.

MATURITY FLOW CHART



FISH MATURITY CODE

Maturity Stage		Female		Male
Immature (virgin)	1	-Ovaries granular in texture -hard and triangular in shape -up to full length of body cavity -membrane firm -eggs distinguishable	6	-Testes long and thin -tubular and scalloped shape -up to full body length -putty like firmness
Mature	2	-Current year spawner -ovary fills body cavity -eggs near full size but not loose -not expelled by pressure	7	-Current year spawner -testes large and lobate -white to purplish color -centers may be fluid -milt not expelled by pressure
Ripe	3	-Ovaries greatly extended & fill body cavity -eggs full size and transparent -expelled by slight pressure	8	-Testes full size -white and lobate -milt expelled by slight pressure
Spent	4	-Spawning complete -ovaries ruptured and flaccid -seed eggs visible -some retained eggs in body cavity	9	-Spawning complete -testes flaccid with some milt -blood vessels obvious -testes violet-pink in color
Resting	5	-Ovary 40-50% of body cavity -membrane thin, loose, & semi-transparent -healed from spawning -seed eggs apparent with few atretic eggs -some eggs may be retained in body cavity	10	-Testes tubular, less lobate -healed from spawning -no fluid in center -usually full length -mottled and purplish in color
Unknown (Virgin)	0	-cannot be sexed -gonads long or short & thin -transparent or translucent		
Unknown (non-virgin)	11	-resting fish -has spawned but gonads regenerated -sexing not possible		

Appendix 8. Biological data by length interval for angled and retained arctic grayling, Dease Arm (Great Bear Lake Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
320	-	-	-	-	-	-	-	-	-	-	-	-	1	325	400	-	1.17	0
340	-	-	-	-	-	-	1	349	500	-	1.18	0	2	347	525	35	1.26	50
360	2	365	575	35	1.18	0	2	364	575	35	1.20	0	4	364	575	29	1.19	0
370	1	370	650	-	1.28	100	2	374	725	35	1.39	50	3	372	700	50	1.36	67
380	-	-	-	-	-	-	1	388	850	-	1.46	0	1	388	850	-	1.46	0
390	2	395	750	0	1.22	100	-	-	-	-	-	-	2	395	750	0	1.22	100
400	1	406	1000	-	1.49	100	1	404	800	-	1.21	100	2	405	900	141	1.35	100
410	-	-	-	-	-	-	1	415	1000	-	1.40	0	1	415	1000	-	1.40	0
420	4	425	913	48	1.19	100	7	423	957	61	1.26	100	11	424	941	58	1.23	100
430	2	436	1025	177	1.24	50	5	435	1030	120	1.26	100	8	435	1025	113	1.25	88
440	2	443	1050	71	1.21	100	3	445	1083	104	1.23	100	5	444	1070	84	1.22	100
450	7	455	1186	131	1.26	100	4	453	1138	95	1.23	100	13	454	1162	112	1.24	92
460	5	465	1120	57	1.11	100	1	461	1200	-	1.22	100	7	464	1150	71	1.15	100
470	4	476	1288	103	1.19	100	1	479	1250	-	1.14	100	6	476	1300	95	1.21	100
480	3	481	1467	76	1.32	100	-	-	-	-	-	-	3	481	1467	76	1.32	100
490	3	494	1367	76	1.13	100	-	-	-	-	-	-	4	495	1313	125	1.09	100
TOTAL	36						29						73					
MEAN		447	1101	250	1.21			423	960	201	1.26			435	1034	250	1.23	

Appendix 9. Biological data by age group for angled and retained arctic grayling, Dease Arm (Great Bear Lake Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED						
		LENGTH(MM)		WEIGHT(G)			%		LENGTH(MM)		WEIGHT(G)			%		LENGTH(MM)		WEIGHT(G)			%
	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
9	-	-	-	-	-	-	-	1	451	-	1200	-	1.31	100	1	451	-	1200	-	1.31	100
10	1	454	-	1200	-	1.28	100	-	-	-	-	-	-	-	1	454	-	1200	-	1.28	100
TOTAL	1							1							2						
MEAN		454	-	1200	-	1.28			451	-	1200	-	1.31			453	2	1200	0	1.30	
MEAN AGE	10.0							9.0							9.5						

Appendix 10. Biological data by length interval for angled and retained northern pike, Dease Arm (Great Bear Lake Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
	N	LENGTH(MM) MEAN	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	WEIGHT(G) MEAN	SD	K	% MAT
640	-	-	-	-	-	-	-	-	-	-	-	-	1	655	1850	-	0.66	100
TOTAL	0						0						1					
MEAN		-	-	-	-			-	-	-	-			655	1850	-	0.66	

Appendix 11. Biological data by age group for angled and retained northern pike, Dease Arm (Great Bear Lake Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED						
	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	655	-	1850	-	0.66	100
TOTAL	0							0							1						
MEAN		-	-	-	-	-			-	-	-	-	-			655	-	1850	-	0.66	
MEAN AGE		-							-							9.0					

Appendix 12. Biological data by length interval for angled and retained lake trout (taxidermist sample), Dease Arm (Great Bear Lake Lodge area), Great Bear Lake, 1985.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
	N	%	LENGTH(MM) MEAN	WEIGHT(G) MEAN	WEIGHT(G) SD	K	N	%	LENGTH(MM) MEAN	WEIGHT(G) MEAN	WEIGHT(G) SD	K	N	%	LENGTH(MM) MEAN	WEIGHT(G) MEAN	WEIGHT(G) SD	K	% FEMALE
775	-	-	-	-	-	-	-	-	-	-	-	-	1	4	787	6069	-	1.25	-
825	-	-	-	-	-	-	1	11	838	7258	-	1.23	1	4	838	7258	-	1.23	-
850	-	-	-	-	-	-	1	11	864	8165	-	1.27	2	8	864	7258	1283	1.13	-
875	1	14	889	7371	-	1.05	2	22	889	6804	642	0.97	4	15	886	7626	1346	1.10	67
900	-	-	-	-	-	-	2	22	914	8165	641	1.07	3	12	910	7711	907	1.02	-
950	-	-	-	-	-	-	1	11	965	10886	-	1.21	2	8	965	8845	2886	0.98	-
975	3	43	991	11038	1309	1.13	-	-	-	-	-	-	5	19	988	10433	1242	1.08	-
1000	-	-	-	-	-	-	1	11	1016	10886	-	1.04	2	8	1016	11071	261	1.06	-
1025	1	14	1041	9979	-	0.88	1	11	1041	11794	-	1.05	2	8	1041	10887	1283	0.97	50
1050	1	14	1067	16443	-	1.35	-	-	-	-	-	-	1	4	1067	16443	-	1.35	-
1075	-	-	-	-	-	-	-	-	-	-	-	-	1	4	1092	16786	-	1.29	-
1150	-	-	-	-	-	-	-	-	-	-	-	-	1	4	1168	19590	-	1.23	-
1225	1	14	1245	24041	-	1.25	-	-	-	-	-	-	1	4	1245	24041	-	1.25	-
TOTAL	7						9						26						
MEAN			1031	12993	5621	1.13			926	8770	1938	1.10			969	10466	4381	1.10	56

Appendix 13. Biological data by age group for angled and retained lake trout (taxidermist sample), Dease Arm (Great Bear Lake Lodge area), Great Bear Lake, 1985.

AGE (YR)	MALES N	%	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	FEMALES N	%	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	COMBINED N	%	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% FEMALE
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	876	-	9526	-	1.42	-
17	-	-	-	-	-	-	-	1	11	889	-	7258	-	1.03	2	11	896	9	7031	321	0.98	-
18	-	-	-	-	-	-	-	1	11	965	-	10886	-	1.21	1	5	965	-	10886	-	1.21	-
19	1	25	889	-	7371	-	1.05	1	11	864	-	8165	-	1.27	2	11	877	18	7768	561	1.16	50
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	787	-	6069	-	1.25	-
22	-	-	-	-	-	-	-	1	11	838	-	7258	-	1.23	1	5	838	-	7258	-	1.23	-
24	-	-	-	-	-	-	-	1	11	914	-	7711	-	1.01	1	5	914	-	7711	-	1.01	-
27	-	-	-	-	-	-	-	3	33	948	82	8921	2735	1.03	3	16	948	82	8921	2735	1.03	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	1016	-	11255	-	1.07	-
31	1	25	991	-	11794	-	1.21	-	-	-	-	-	-	-	1	5	991	-	11794	-	1.21	-
35	-	-	-	-	-	-	-	1	11	1016	-	10886	-	1.04	1	5	1016	-	10886	-	1.04	-
36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	1168	-	19590	-	1.23	-
37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	978	-	9526	-	1.02	-
39	1	25	1245	-	24041	-	1.25	-	-	-	-	-	-	-	1	5	1245	-	24041	-	1.25	-
46	1	25	1041	-	9979	-	0.88	-	-	-	-	-	-	-	1	5	1041	-	9979	-	0.88	-
TOTAL	4							9							19							
MEAN			1042	15	13296	7390	1.10			926	68	8770	1938	1.10			959	113	10257	4530	1.11	69
MEAN AGE	33.8									24.0							26.7					

Appendix 14. Biological data by length interval for angled and retained lake whitefish, McTavish Arm (north), (Arctic Circle Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
	N	LENGTH(MM) MEAN	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	WEIGHT(G) MEAN	SD	K	% MAT
410	1	415	800	-	1.12	0	-	-	-	-	-	-	1	415	800	-	1.12	0
510	1	515	1800	-	1.32	100	-	-	-	-	-	-	1	515	1800	-	1.32	100
530	1	534	1900	-	1.25	100	-	-	-	-	-	-	1	534	1900	-	1.25	100
550	1	550	2400	-	1.44	100	1	551	2700	-	1.61	100	2	551	2550	212	1.53	100
560	-	-	-	-	-	-	1	563	2600	-	1.46	100	1	563	2600	-	1.46	100
590	-	-	-	-	-	-	-	-	-	-	-	-	1	598	2850	-	1.33	0
600	1	606	2750	-	1.24	100	-	-	-	-	-	-	1	606	2750	-	1.24	100
660	-	-	-	-	-	-	-	-	-	-	-	-	1	667	4400	-	1.48	0
TOTAL	5						2						9					
MEAN		524	1930	740	1.27			557	2650	71	1.54			556	2467	974	1.36	

Appendix 15. Biological data by age group for angled and retained lake whitefish, McTavish Arm (north), (Arctic Circle Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED					
	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT
10	2	465	71	1300	707	1.22	50	-	-	-	-	-	-	-	2	465	71	1300	707	1.22	50
14	2	542	11	2150	354	1.35	100	1	563	-	2600	-	1.46	100	3	549	15	2300	361	1.38	100
17	-	-	-	-	-	-	-	1	551	-	2700	-	1.61	100	1	551	-	2700	-	1.61	100
TOTAL	4							2							6						
MEAN		504	61	1725	670	1.28			557	8	2650	71	1.54			521	55	2033	706	1.37	
MEAN AGE	12.0							15.5							13.2						

Appendix 16. Biological data by length interval for angled and retained arctic grayling, McTavish Arm (north), (Arctic Circle Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
210	-	-	-	-	-	-	1	218	200	-	1.93	0	1	218	200	-	1.93	0
280	2	283	275	35	1.22	0	-	-	-	-	-	-	2	283	275	35	1.22	0
300	2	302	325	35	1.19	0	-	-	-	-	-	-	2	302	325	35	1.19	0
320	2	324	400	71	1.18	0	2	320	350	71	1.07	50	4	322	375	65	1.13	25
330	7	333	400	58	1.09	57	4	336	413	25	1.09	100	12	334	413	53	1.10	67
340	2	347	450	0	1.08	50	5	346	440	65	1.06	100	7	346	443	53	1.07	86
350	6	353	467	41	1.06	100	9	353	467	75	1.06	100	17	353	462	60	1.05	88
360	7	364	507	45	1.05	100	5	366	530	27	1.08	100	14	365	521	43	1.07	86
370	10	374	600	58	1.15	100	5	374	600	35	1.15	100	16	374	600	48	1.15	94
380	7	384	600	87	1.06	100	1	386	750	-	1.30	100	8	385	619	96	1.09	100
390	2	390	700	0	1.18	50	4	392	675	29	1.12	100	7	392	686	24	1.14	71
400	-	-	-	-	-	-	4	405	825	50	1.24	100	6	405	808	49	1.21	67
410	-	-	-	-	-	-	4	415	838	48	1.17	100	5	416	850	50	1.18	80
420	2	426	850	71	1.10	100	3	426	850	87	1.10	67	7	426	886	85	1.15	57
430	4	434	938	48	1.15	100	2	431	1050	71	1.31	100	9	433	983	61	1.21	67
440	2	445	1000	71	1.13	100	1	448	1050	-	1.17	100	10	444	1005	60	1.15	30
450	1	452	1000	-	1.08	100	2	452	1100	0	1.19	100	11	453	1114	74	1.20	27
460	-	-	-	-	-	-	3	464	1167	29	1.17	100	5	465	1140	55	1.13	60
470	-	-	-	-	-	-	-	-	-	-	-	-	5	474	1170	57	1.10	0
480	1	485	1400	-	1.23	100	-	-	-	-	-	-	5	484	1300	71	1.15	20
490	-	-	-	-	-	-	-	-	-	-	-	-	2	493	1475	35	1.24	0
TOTAL	57						55						155					
MEAN		371	588	223	1.11			380	656	251	1.14			393	728	299	1.14	

Appendix 17. Biological data by age group for angled and retained arctic grayling, McTavish Arm (north), (Arctic Circle Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED						
		LENGTH(MM)		WEIGHT(G)			%		LENGTH(MM)		WEIGHT(G)			%		LENGTH(MM)		WEIGHT(G)			%
	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
3	-	-	-	-	-	-	-	1	218	-	200	-	1.93	0	1	218	-	200	-	1.93	0
4	7	314	26	379	81	1.21	14	-	-	-	-	-	-	-	7	314	26	379	81	1.21	14
5	7	337	22	421	122	1.07	71	2	347	14	475	106	1.13	100	9	340	21	433	115	1.09	78
6	8	352	15	481	80	1.09	75	18	361	23	528	113	1.11	94	26	358	21	513	104	1.10	88
7	18	376	17	572	103	1.07	100	15	375	32	603	180	1.11	100	34	377	25	596	149	1.09	100
8	8	403	35	750	242	1.11	100	4	368	30	525	189	1.02	100	12	391	36	675	244	1.08	100
9	2	413	32	800	141	1.14	100	8	428	29	975	156	1.24	100	10	425	29	940	163	1.22	100
10	3	444	7	967	29	1.10	100	2	446	27	975	247	1.09	50	5	445	14	970	125	1.10	80
11	-	-	-	-	-	-	-	2	452	0	1100	0	1.19	100	2	452	0	1100	0	1.19	100
TOTAL	53							52							106						
MEAN		368	40	571	201	1.10			379	46	649	247	1.14			374	43	612	228	1.12	
MEAN AGE		6.6							7.2							6.9					

Appendix 18. Biological data by length interval for angled and retained northern pike, McTavish Arm (north), (Arctic Circle Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
520	1	532	1050	-	0.70	100	-	-	-	-	-	-	1	532	1050	-	0.70	100
TOTAL	1						0						1					
MEAN		532	1050	-	0.70			-	-	-	-			532	1050	-	0.70	

Appendix 19. Biological data by age group for angled and retained northern pike, McTavish Arm (north), (Arctic Circle Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES N	MALES LENGTH(MM) MEAN	MALES LENGTH(MM) SD	MALES WEIGHT(G) MEAN	MALES WEIGHT(G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES LENGTH(MM) SD	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED LENGTH(MM) SD	COMBINED WEIGHT(G) MEAN	COMBINED WEIGHT(G) SD	COMBINED K	COMBINED % MAT
5	1	532	-	1050	-	0.70	100	-	-	-	-	-	-	-	1	532	-	1050	-	0.70	100
TOTAL	1							0							1						
MEAN		532	-	1050	-	0.70			-	-	-	-	-			532	-	1050	-	0.70	
MEAN AGE		5.0							-							5.0					

Appendix 20. Biological data by length interval for angled and retained lake whitefish, McTavish Arm (south), (Bransons Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES N	MALES LENGTH(MM) MEAN	MALES WEIGHT(G) MEAN	MALES WEIGHT(G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED WEIGHT(G) MEAN	COMBINED WEIGHT(G) SD	COMBINED K	COMBINED % MAT
330	-	-	-	-	-	-	1	335	550	-	1.46	0	1	335	550	-	1.46	0
TOTAL	0						1						1					
MEAN		-	-	-	-			335	550	-	1.46			335	550	-	1.46	

Appendix 21. Biological data by age group for angled and retained lake whitefish, McTavish Arm (south), (Bransons Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES N	MALES LENGTH(MM) MEAN	MALES LENGTH(MM) SD	MALES WEIGHT(G) MEAN	MALES WEIGHT(G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES LENGTH(MM) SD	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED LENGTH(MM) SD	COMBINED WEIGHT(G) MEAN	COMBINED WEIGHT(G) SD	COMBINED K	COMBINED % MAT
5	-	-	-	-	-	-	-	1	335	-	550	-	1.46	0	1	335	-	550	-	1.46	0
TOTAL	0							1							1						
MEAN		-	-	-	-	-			335	-	550	-	1.46			335	-	550	-	1.46	
MEAN AGE		-							5.0							5.0					

Appendix 22. Biological data by length interval for angled and retained arctic grayling, McTavish Arm (south), (Bransons Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
300	1	307	450	-	1.56	0	-	-	-	-	-	-	1	307	450	-	1.56	0
310	-	-	-	-	-	-	1	310	450	-	1.51	0	1	310	450	-	1.51	0
320	1	320	400	-	1.22	0	1	323	450	-	1.34	0	2	322	425	35	1.28	0
340	1	349	550	-	1.29	100	-	-	-	-	-	-	1	349	550	-	1.29	100
350	1	351	550	-	1.27	0	-	-	-	-	-	-	2	351	550	0	1.28	0
360	-	-	-	-	-	-	2	363	600	0	1.26	50	2	363	600	0	1.26	50
370	1	375	700	-	1.33	100	-	-	-	-	-	-	1	375	700	-	1.33	100
380	2	381	725	35	1.31	100	3	387	733	76	1.26	100	5	385	730	57	1.28	100
390	1	397	850	-	1.36	100	-	-	-	-	-	-	2	396	875	35	1.41	50
400	1	401	800	-	1.24	100	-	-	-	-	-	-	1	401	800	-	1.24	100
410	1	413	900	-	1.28	100	-	-	-	-	-	-	1	413	900	-	1.28	100
420	1	424	900	-	1.18	100	1	426	850	-	1.10	100	2	425	875	35	1.14	100
430	1	434	1100	-	1.35	100	-	-	-	-	-	-	3	433	1167	76	1.44	33
440	1	445	1000	-	1.13	100	-	-	-	-	-	-	1	445	1000	-	1.13	100
450	-	-	-	-	-	-	-	-	-	-	-	-	1	455	1200	-	1.27	0
460	1	465	1150	-	1.14	100	1	463	1300	-	1.31	100	2	464	1225	106	1.23	100
TOTAL	14						9						28					
MEAN		389	771	231	1.28			379	717	260	1.29			390	796	253	1.30	

Appendix 23. Biological data by age group for angled and retained arctic grayling, McTavish Arm (south), (Bransons Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED					
		LENGTH(MM)		WEIGHT(G)			%		LENGTH(MM)		WEIGHT(G)			%		LENGTH(MM)		WEIGHT(G)			%
	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
4	3	326	23	467	76	1.35	0	2	317	9	450	0	1.42	0	5	322	17	460	55	1.38	0
5	3	368	17	667	104	1.33	100	2	363	2	600	0	1.26	50	5	366	12	640	82	1.30	80
6	5	408	24	850	112	1.25	100	2	388	1	775	35	1.33	100	8	396	27	794	135	1.28	88
7	2	445	29	1025	177	1.16	100	1	426	-	850	-	1.10	100	3	438	23	967	161	1.14	100
8	-	-	-	-	-	-	-	1	385	-	650	-	1.14	100	1	385	-	650	-	1.14	100
9	-	-	-	-	-	-	-	1	463	-	1300	-	1.31	100	1	463	-	1300	-	1.31	100
TOTAL	13							9							23						
MEAN		385	46	746	219	1.28			379	47	717	260	1.29			381	45	726	229	1.28	
MEAN AGE		5.5							6.0							5.7					

Appendix 24. Biological data by length interval for angled and retained northern pike, McTavish Arm (south), (Bransons Lodge area), Great Bear Lake, 1984.

LENGTH INTERVAL (MM)	MALES						FEMALES						COMBINED					
		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%		LENGTH(MM)	WEIGHT(G)			%
	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT	N	MEAN	MEAN	SD	K	MAT
540	-	-	-	-	-	-	1	545	1100	-	0.68	0	1	545	1100	-	0.68	0
620	1	625	1750	-	0.72	100	1	636	1700	-	0.66	100	2	631	1725	35	0.69	100
660	2	672	2400	71	0.79	100	-	-	-	-	-	-	2	672	2400	71	0.79	100
680	1	690	2100	-	0.64	100	-	-	-	-	-	-	1	690	2100	-	0.64	100
700	-	-	-	-	-	-	1	703	2650	-	0.76	100	1	703	2650	-	0.76	100
760	-	-	-	-	-	-	1	760	3200	-	0.73	100	1	760	3200	-	0.73	100
780	-	-	-	-	-	-	2	794	3225	460	0.64	100	2	794	3225	460	0.64	100
980	1	986	5500	-	0.57	100	-	-	-	-	-	-	1	986	5500	-	0.57	100
TOTAL	5						6						11					
MEAN		729	2830	1517	0.70			705	2517	935	0.69			716	2659	1177	0.69	

Appendix 25. Biological data by age group for angled and retained northern pike, McTavish Arm (south), (Bransons Lodge area), Great Bear Lake, 1984.

AGE (YR)	MALES							FEMALES							COMBINED						
		LENGTH(MM)		WEIGHT(G)			%		LENGTH(MM)		WEIGHT(G)			%		LENGTH(MM)		WEIGHT(G)			%
	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT	N	MEAN	SD	MEAN	SD	K	MAT
5	1	625	-	1750	-	0.72	100	-	-	-	-	-	-	-	1	625	-	1750	-	0.72	100
6	-	-	-	-	-	-	-	2	591	64	1400	424	0.67	50	2	591	64	1400	424	0.67	50
7	-	-	-	-	-	-	-	1	703	-	2650	-	0.76	100	1	703	-	2650	-	0.76	100
8	1	690	-	2100	-	0.64	100	2	774	20	3050	212	0.66	100	3	746	50	2733	569	0.65	100
9	2	672	2	2400	71	0.79	100	-	-	-	-	-	-	-	2	672	2	2400	71	0.79	100
12	-	-	-	-	-	-	-	1	799	-	3550	-	0.70	100	1	799	-	3550	-	0.70	100
14	1	986	-	5500	-	0.57	100	-	-	-	-	-	-	-	1	986	-	5500	-	0.57	100
TOTAL	5							6							11						
MEAN		729	146	2830	1517	0.70			705	99	2517	935	0.69			716	116	2659	1177	0.69	
MEAN AGE	9.0							7.8							8.4						

Appendix 26. Biological data by length interval for angled and retained lake trout (taxidermist samples), Smith Arm, (Trophy Lodge area), Great Bear Lake, 1985.

LENGTH INTERVAL (MM)	MALES N	%	LENGTH(MM) MEAN	WEIGHT(G) MEAN	SD	K	FEMALES N	%	LENGTH(MM) MEAN	WEIGHT(G) MEAN	SD	K	COMBINED N	%	LENGTH(MM) MEAN	WEIGHT(G) MEAN	SD	K	% FEMALE
850	1	20	864	7258	-	1.13	-	-	-	-	-	-	1	11	864	7258	-	1.13	-
950	1	20	965	7711	-	0.86	-	-	-	-	-	-	1	11	965	7711	-	0.86	-
975	1	20	991	8618	-	0.89	-	-	-	-	-	-	1	11	991	8618	-	0.89	-
1025	-	-	-	-	-	-	-	-	-	-	-	-	1	11	1041	9979	-	0.88	-
1050	2	40	1067	17237	2566	1.42	-	-	-	-	-	-	2	22	1067	17237	2566	1.42	-
1075	-	-	-	-	-	-	1	50	1092	16783	-	1.29	1	11	1092	16783	-	1.29	-
1150	-	-	-	-	-	-	1	50	1168	21773	-	1.37	1	11	1168	21773	-	1.37	-
1175	-	-	-	-	-	-	-	-	-	-	-	-	1	11	1181	21065	-	1.28	-
TOTAL	5						2						9						
MEAN			991	11612	5315	1.14			1130	19278	3528	1.33			1048	14184	5868	1.17	29

Appendix 27. Biological data by age group for angled and retained lake trout (taxidermist sample), Smith Arm, (Trophy Lodge area), Great Bear Lake, 1985.

AGE (YR)	MALES N	%	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	FEMALES N	%	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	COMBINED N	%	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% FEMALE
27	1	50	965	-	7711	-	0.86	-	-	-	-	-	-	-	1	20	965	-	7711	-	0.86	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	20	1041	-	9979	-	0.88	-
30	1	50	1067	-	19051	-	1.57	-	-	-	-	-	-	-	1	20	1067	-	19051	-	1.57	-
32	-	-	-	-	-	-	-	1	50	1168	-	21773	-	1.37	1	20	1168	-	21773	-	1.37	-
36	-	-	-	-	-	-	-	1	50	1092	-	16783	-	1.29	1	20	1092	-	16783	-	1.29	-
TOTAL	2							2							5							
MEAN			1016		7213381	8019	1.21			1130		5419278	3528	1.33			1067	74	15059	5996	1.19	50
MEAN AGE	28.5									34.0							30.6					

Appendix 28. Biological data by length interval for angled and retained lake whitefish, Smith Arm, (Trophy Lodge area), Great Bear Lake, 1985.

LENGTH INTERVAL (MM)	MALES N	MALES LENGTH(MM) MEAN	MALES WEIGHT(G) MEAN	MALES WEIGHT(G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED WEIGHT(G) MEAN	COMBINED WEIGHT(G) SD	COMBINED K	COMBINED % MAT
550	-	-	-	-	-	-	1	550	2400	-	1.44	100	1	550	2400	-	1.44	100
TOTAL MEAN	0	-	-	-	-		1	550	2400	-	1.44		1	550	2400	-	1.44	

Appendix 29. Biological data by length interval for angled and retained arctic grayling, Smith Arm, (Trophy Lodge area), Great Bear Lake, 1985.

LENGTH INTERVAL (MM)	MALES N	MALES LENGTH(MM) MEAN	MALES WEIGHT(G) MEAN	MALES WEIGHT(G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED WEIGHT(G) MEAN	COMBINED WEIGHT(G) SD	COMBINED K	COMBINED % MAT
310	1	319	400	-	1.23	0	-	-	-	-	-	-	1	319	400	-	1.23	0
330	1	330	450	-	1.25	0	1	338	500	-	1.29	0	2	334	475	35	1.27	0
340	1	341	450	-	1.13	0	1	340	450	-	1.14	0	2	341	450	0	1.14	0
350	2	353	550	71	1.25	0	2	354	575	35	1.30	100	5	354	580	57	1.31	40
360	2	364	675	35	1.40	50	2	369	625	35	1.25	100	5	366	650	35	1.33	60
370	3	375	717	58	1.36	100	11	374	709	80	1.36	82	15	374	713	72	1.36	80
380	6	386	767	93	1.33	67	21	383	776	58	1.38	100	29	384	779	68	1.38	86
390	21	395	769	97	1.25	90	16	393	822	63	1.35	94	45	394	793	86	1.30	76
400	19	403	858	75	1.31	89	9	405	856	88	1.29	78	29	404	859	77	1.31	83
410	10	415	840	88	1.18	100	2	412	900	71	1.29	100	15	414	857	82	1.21	80
420	2	427	950	0	1.22	100	2	428	975	35	1.25	100	4	427	963	25	1.23	100
430	7	435	1029	57	1.25	100	4	435	1100	91	1.34	100	13	435	1054	80	1.28	85
440	2	443	1000	0	1.15	100	2	448	1200	212	1.34	100	7	445	1057	143	1.20	57
450	2	459	1275	106	1.33	100	-	-	-	-	-	-	5	457	1160	119	1.22	40
460	2	464	1150	141	1.15	100	1	468	1350	-	1.32	100	3	465	1217	153	1.21	100
470	2	473	1400	141	1.33	100	-	-	-	-	-	-	4	474	1313	131	1.24	50
480	1	485	1500	-	1.31	100	-	-	-	-	-	-	2	486	1375	177	1.20	50
490	-	-	-	-	-	-	1	491	1350	-	1.14	100	1	491	1350	-	1.14	100
TOTAL MEAN	84	405	852	201	1.26		75	393	821	172	1.34		187	402	850	188	1.30	

Appendix 30. Biological data by age group for angled and retained arctic grayling, Smith Arm, (Trophy Lodge area), Great Bear Lake, 1985.

AGE (YR)	MALES N	MALES LENGTH(MM) MEAN	MALES LENGTH(MM) SD	MALES WEIGHT(G) MEAN	MALES WEIGHT(G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES LENGTH(MM) SD	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED LENGTH(MM) SD	COMBINED WEIGHT(G) MEAN	COMBINED WEIGHT(G) SD	COMBINED K	COMBINED % MAT
4	6	360	32	642	204	1.34	50	2	354	23	600	141	1.34	50	8	358	28	631	181	1.34	50
5	5	366	22	630	160	1.26	40	14	376	18	736	141	1.36	93	19	374	19	708	149	1.34	79
6	34	399	12	816	81	1.29	94	33	386	9	780	76	1.36	97	68	392	12	800	81	1.33	96
7	27	413	19	861	133	1.22	89	14	399	15	843	145	1.32	79	42	408	19	851	136	1.25	85
8	4	437	29	1063	266	1.25	100	5	409	26	840	156	1.23	80	9	421	29	939	229	1.24	89
9	3	465	26	1350	260	1.33	100	3	435	12	1133	189	1.37	100	6	450	25	1242	235	1.35	100
10	1	439	-	1100	-	1.30	100	2	480	16	1350	0	1.23	100	3	466	26	1267	144	1.25	100
11	-	-	-	-	-	-	-	1	447	-	1050	-	1.18	100	1	447	-	1050	-	1.18	100
TOTAL	80							74							156						
MEAN		403	28	843	191	1.27			393	25	816	168	1.34			398	27	829	179	1.30	
MEAN AGE		6.4							6.4							6.4					

Appendix 31. Biological data by length interval for angled and retained northern pike, Smith Arm, (Trophy Lodge area), Great Bear Lake, 1985.

LENGTH INTERVAL (MM)	MALES N	MALES LENGTH(MM) MEAN	MALES WEIGHT(G) MEAN	MALES WEIGHT(G) SD	MALES K	MALES % MAT	FEMALES N	FEMALES LENGTH(MM) MEAN	FEMALES WEIGHT(G) MEAN	FEMALES WEIGHT(G) SD	FEMALES K	FEMALES % MAT	COMBINED N	COMBINED LENGTH(MM) MEAN	COMBINED WEIGHT(G) MEAN	COMBINED WEIGHT(G) SD	COMBINED K	COMBINED % MAT
580	-	-	-	-	-	-	1	580	1400	-	0.72	0	1	580	1400	-	0.72	0
600	-	-	-	-	-	-	1	615	1700	-	0.73	0	2	608	1750	71	0.78	0
620	-	-	-	-	-	-	2	627	2050	71	0.83	50	3	630	2167	208	0.87	33
640	2	643	2025	106	0.76	50	1	644	1950	-	0.73	100	4	645	2063	144	0.77	50
660	1	674	2300	-	0.75	100	2	675	2200	141	0.72	50	4	673	2338	229	0.77	50
680	1	695	2860	-	0.85	0	2	696	2525	35	0.75	100	3	696	2637	195	0.78	67
700	1	714	2900	-	0.80	100	4	712	2838	287	0.79	75	5	712	2850	250	0.79	80
720	1	736	3150	-	0.79	100	-	-	-	-	-	-	2	732	3100	71	0.79	50
740	1	750	3150	-	0.75	100	1	742	3000	-	0.73	100	5	744	3280	196	0.80	40
760	2	768	3000	566	0.66	100	2	766	3450	283	0.77	50	4	767	3225	448	0.72	75
780	1	785	3700	-	0.76	100	2	780	3850	1202	0.81	100	3	782	3800	854	0.80	100
800	-	-	-	-	-	-	1	808	3600	-	0.68	100	1	808	3600	-	0.68	100
860	-	-	-	-	-	-	1	872	5550	-	0.84	100	1	872	5550	-	0.84	100
920	-	-	-	-	-	-	-	-	-	-	-	-	1	930	6050	-	0.75	0
TOTAL	10						20						39					
MEAN		717	2811	571	0.76			710	2835	999	0.77			713	2904	956	0.78	

Appendix 32. Biological data by age group for angled and retained northern pike, Smith Arm, (Trophy Lodge area), Great Bear Lake, 1985.

AGE (YR)	MALES							FEMALES							COMBINED						
	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT	N	LENGTH(MM) MEAN	SD	WEIGHT(G) MEAN	SD	K	% MAT
5	-	-	-	-	-	-	-	1	580	-	1400	-	0.72	0	1	580	-	1400	-	0.72	0
6	-	-	-	-	-	-	-	2	630	21	1825	177	0.73	50	2	630	21	1825	177	0.73	50
7	1	714	-	2900	-	0.80	100	3	701	71	2583	629	0.75	0	5	690	59	2610	480	0.79	25
8	3	653	18	2117	176	0.76	67	4	698	16	2638	320	0.77	75	7	679	29	2414	373	0.77	71
9	-	-	-	-	-	-	-	5	743	54	3300	951	0.79	100	7	744	44	3336	779	0.80	100
10	4	755	15	3075	338	0.72	100	-	-	-	-	-	-	-	4	755	15	3075	338	0.72	100
11	1	785	-	3700	-	0.76	100	-	-	-	-	-	-	-	2	757	40	3375	460	0.78	100
12	-	-	-	-	-	-	-	1	872	-	5550	-	0.84	100	1	872	-	5550	-	0.84	100
TOTAL	9							16							29						
MEAN		720	55	2806	605	0.74			708	75	2838	1085	0.77			712	65	2860	876	0.77	
MEAN AGE		9.1							7.9							8.4					